The Playground of Ideas:

A design-based research investigation into dialogic thinking with six- and seven-year-old children in England

Laura Suzanne Kerslake

Hughes Hall

University of Cambridge

December 2019

This dissertation is submitted for the degree of Doctor of Philosophy

Declaration

This thesis is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text. It is not substantially the same as any that I have submitted, or, is being concurrently submitted for a degree or diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. I further state that no substantial part of my thesis has already been submitted, or, is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. It does not exceed the prescribed word limit for the relevant Degree Committee

Abstract

The Playground of Ideas: A design-based research investigation into dialogic thinking with six- and seven-year-old children in England

Laura Suzanne Kerslake

The aim of this study was to design and research an intervention to develop the dialogic thinking skills of children in Key Stage 1. Dialogic thinking was conceptualised by drawing on strands of research from critical thinking and dialogic theory, together with argumentation and Philosophy with Children (PwC). The study took a Buberian stance to dialogue as oscillating between dialogic and non-dialogic relationships. The research methodology was design-based research (DBR) in order develop and trial an intervention within authentic settings and with practitioners as research collaborators.

Following initial field and scoping work, the Playground of Ideas intervention was designed. It is a picture-based intervention that is used with PwC questions to explicitly teach children dialogic thinking skills. It was then trialled in a local context and an extended context with 10 classes across England. Revisions were made to improve the design following these iterations, and the intervention was evaluated. Children took a non-verbal reasoning test individually and groups of three, and their pre- and post-test scores were compared. The group tests were also video recorded and analysed to identify changes in the children's talk.

Children's reasoning scores in both tests increased following the intervention, and there was also a greater variation in children's dialogue patterns to problem-solve. In addition, the roles that they took within the dialogue showed greater variation: initiator, corroborator and questioner roles were more distributed among the group members. This indicates that children were not positioning themselves or others 'as' a particular role, and that this resulted in a variety of strategies for problem-solving. A further outcome from this iteration was to use these insights to generate a new tool with which teachers can assess if children are developing dialogic thinking in small group settings. This was theorised as oscillating asymmetry in peer relationships by building on Buber's concepts.

Preface

In certifying that this thesis is my own work, I list here the publications in which some of this work has appeared. I have been sole author or lead author in these works.

Kerslake, L. (2019). The Playground of Ideas: developing a structured approach to the community of inquiry for young children. In E. Manalo (Ed) *Deeper Learning, Dialogic Learning, and Critical Thinking. Research-based Strategies for the Classroom*. London: Routledge

Kerslake, L. (2018). End-in-itself or means to an end? Solutions to the tensions between philosophising and schooling. In F. García, E. Duthie and R. Robles. (Eds.). *Parecidos de familia. Propuestas actuales en Filosofía para Niños / Family resemblances. Current proposals in Philosophy for Children*. Madrid: Anaya.

Kerslake, L. (2018). Philosophy with Children from pragmatism to posthumanism: thinking through the Community of Philosophical Inquiry. In L. Kerslake and R. Wegerif (Eds.) *The Theory of Teaching Thinking. International Perspectives.* London: Routledge

Kerslake, L. and Wegerif, R. (2017). Review of The semiotics of emoji: the rise of visual language in the age of the internet by Marcel Danesi. *Media and Communication 5*(4), 75-78

Kerslake, L. and Rimmington, S. (2017). Sharing talk, sharing cognition: philosophy with children as the basis for productive classroom interaction *Issues in Early Education 1*(36), 21-32.

Kerslake, L. and Wegerif, R. (2017). Review of Argumentation, dialogue and education: history, theory and practice by Baruch Schwarz, Michael Baker. Cambridge University Press (2017) *Thinking Skills and Creativity 25*, 36-37

Table of Contents

List of Figures

Chapter 8.

Chapter 9.

Table of Appendices

Acknowledgements

I'd first and foremost like to thank my supervisor, Professor Rupert Wegerif, for the many interesting conversations throughout my PhD. Even more than the support in the production of this thesis (for which I'm of course grateful), it has been a pleasure to engage in the dialogue of ideas.

Thanks too to colleagues in the CEDiR group in the Faculty of Education for the opportunities to share and discuss work, and promote dialogue in education.

My considerable thanks to Hughes Hall: a thoroughly supportive and inspirational place in which to study.

This work is funded by the ESRC, and I have been grateful for the many additional opportunities available throughout my studies, especially the funded internship which I was able to undertake.

My thanks to Mark, Holly, Clara and Beth, who have heard the word 'dialogic' more than they ever thought they would, and whose understanding and patience have been invaluable.

Thanks also to Phil for the friendship and many oracy discussions over the years!

Chapter 1. Introduction

1.1. The Background to the Research

In 2014 I started a Primary PGCE course with a school-based provider in Devon. The instruction included a number of weeks' observations of different teachers in a school, followed by the start of our own practice. This was interspersed with days of centre-based training, which was primarily carried out by Babcock[1], an educational consultancy company which provides teacher training and educational resources for early years' settings, primary and secondary schools.

It soon became apparent that there was a considerable disparity between the information given to us on training days about what would and should happen in the classroom, and the reality of what occurred in classroom practice. A particular example of this was on the mathematics instruction days. The sequence of events, according to our Babcock trainers, would be similar to the following:

1. Put children into small groups (pairs or groups of three)
2. Provide visual and tactile materials to represent number concepts (for example: number lines, Cuisinaire rods, numicon)
3. The children will talk together and in doing so come to a greater understanding of mathematical concepts. Higher ability children will increase their understanding by explaining the concepts that they have already grasped to lower ability children; lower ability children will increase their understanding by collaborating with higher ability children.

The discrepancy arose in that children did not talk in the way that we had been led to believe they would. In the practical context, children's talk was not always productive – that is, it did not achieve the aims for which it was deployed. Some children argued, others understood problems quickly, but did not communicate their understanding to others, some children were not confident to speak – or, in other

[1] https://www.babcock-education.com/

words, children exhibited all of the usual behaviour one might expect to find from a group of children in a classroom.

Reflecting on this, there seemed to be a gap between steps two and three in the list above. Putting the children to talk in small groups seemed to be giving them the opportunity to talk, however even in these small groups the talk was unbalanced. From my observational perspective, it was far from the case that these small groups resulted in talk which led to understanding for all of the members of the group, and so did not help to fulfil the aims of the lesson.

This was not wholly unexpected, which was indicated in the work on mathematical collaboration in primary schools carried out by Askew (2012), popularising the work of Boaler (1999) for a UK practitioner readership. Askew determined that he himself does not tend to undertake one-off sessions in schools because children need training in order to be able to carry out productive discussions. Indeed, Askew writes that teachers even tend to adopt a 'see, I told you these kids couldn't do that' attitude.

1.2 The value of the study in an education context

What was missing from the sequence of children's group talk which I set out in the previous section, and from my PGCE training, was a way of showing, modelling or teaching the children how to engage in productive talk in the classroom. This is also reflected in the new National Curriculum document for Speaking and Listening (Department for Education, 2013), which contains a single page of speaking and listening guidelines to cover all of primary school instruction. There are no specific guidelines as to how teachers should teach speaking and listening skills.

It is a concern also highlighted by Ofsted, the body which is responsible for school inspections in the UK (The Office for Standards in Education, Children's Services and Skills – known universally in the UK as Ofsted). As a part of the development of the intervention, a review of school inspection documents for Devon schools from the years 2015-2017 was carried out. A number of comments revealed concerns about the spoken communication abilities of children at school entry age. A

school which received a rating of ‘requires improvement’ received the following comment: “a significant number [of children] have low speaking and listening skills” with “not enough focus on learning and acquiring the basic [talking] skills” (Ofsted, 2014, p. 4). This is compared to an outstanding school in which children are “routinely challenged with probing questions which make pupils think deeply” (Ofsted, 2015, p. 6). This comment also makes explicit the connection between talking and thinking. Both comments also refer to the emphasis on both teacher and pupil activity in connection with communication skills.

In line with Ofsted’s comments above, there are a number of educationalists and researchers who connect productive talk with children’s thinking and ability to access children’s curriculum content (Askew, 2012; Boaler, 1999; Mercer, 2008; Alexander, 2004; Vrikki, Wheatley, Howe, Hennessy and Mercer, 2019; Gorard, Siddiqui and See, 2017). In the mathematics example given above, the aim is not merely for children to talk together, but also to combine their thinking to come to a greater understanding of the problem. Therefore in this research study, the focus was on talk and thinking and the relationship between them.

One of the best-known examples of a pedagogy that connects thinking and talking is Philosophy with Children (PwC). In a PwC session, children are exposed to a stimulus (such as a text or object) and then are encouraged to devise questions to ask about it, followed by a whole-group discussion. There are also permutations of PwC in which children are provided with philosophical questions and then asked to discuss them.

The aim of a PwC session is not to be the first to a correct answer, or to debate points with the aim of persuading others to one’s own point of view, but to gain further understanding of an issue through inquiry. Lipman (1991) used the metaphor of a sailing boat “tacking into the wind” (p. 15). It does not arrive by the most direct route, but it arrives by the process of sailing. Inquiry is conceived of as a process of thinking where the thought itself is constructed through talk rather than as individual thoughts which are privately constructed and then communicated through talk.

This latter conception of the relationship between thinking and talking is described as *monologism* (Linell, 2003), in which cognition is the primary consideration, and communication serves the purpose of transferring privately constructed thoughts to

another. This could either be the teacher transmitting knowledge to the students, or students themselves constructing thoughts and transmitting them to other students, for example in group work. This has long been referred to as the *transmission* or *banking* model of education (Freire, 1972), in which knowledge is transmitted from teacher to be banked by the learner. As part of the rise of critical pedagogies since the 1970s, Freire and others (see Schwarz and Baker, 2017) critiqued this model for positioning learners as passive receivers of information. This is not the sort of talk that is useful for children working together to solve problems.

The contrast to monologism is *dialogism*, in which ideas (and thinking) are jointly constructed though talk (Wegerif, 2007). Although the words dialogue or dialogic are used, it is not in the casual sense of 'talking with someone'. Thought and talk are bound up with one another (Kerslake and Rimmington, 2017), but what is also key is the dialogic relationship between participants in dialogue (Todorov, 1984). In education, dialogic thinking is characterised by children setting forth their own ideas in discussion and critically responding to those of others, while also maintaining dispositions toward dialogic relationships, for example, a commitment to hearing all voices in a dialogue, (Wegerif, 2007).

This study particularly focuses on the ways in which dialogic theories, which were conceived of outside of the education setting, can be usefully applied to an education context. Both Bakhtin (1981) and Buber (1965) claim that the dialogic relationship is rare, and moreover that hierarchical structures such as schools are not conducive to true dialogue. It also focuses on the epistemological aspects of ideas in dialogue. If all voices in a dialogue are to be heard, there needs to be some way of making value judgements on the claims that are made. In many cases, children will be looking for an answer that is already known (such as an answer to a mathematics problem). Although proponents of dialogic pedagogy claim the aim in dialogue is not to persuade others (such as in a debate), it is not the case either that all claims are of equal merit. Therefore, this study also focuses on critical thinking and argumentation and explores their relationship to dialogue.

1.3. Research methodology considerations

This is a design-based research study (DBR), and a full discussion of DBR will be given in Chapter 3. However, the particularities of DBR require this to be reflected in the thesis structure and so to explain this, an introduction to DBR is provide in this section, along with an overview of the iterations and the framework of the research design.

DBR is an "emergent instead of completely controlled" design (Bronkhorst and de Kleijn, 2016, p.86) in which each iteration informs the next. It is therefore not possible to know how the direction and interests of the research will develop until an iteration is carried out. This extends to the research questions and methods. I have represented this as such in this thesis, as a more traditional thesis structure where the broad headings of literature review, research questions, methodology, methods, findings and discussion are presented in linear succession is less faithful to the DBR iterative process. Instead, each iteration is conceptualised as a miniature research cycle (Hilliard, 2013), and has been reported on as such in this thesis.

Therefore a difference between this thesis structure and others is that, although DBR methodology is presented in the methodology section, the methods used for each cycle are presented in the report of that cycle. Additionally, while the overarching research question has been presented following the DBR methodology section, each cycle has its own set of research questions which pertain to that cycle. In the literature there is disagreement about this approach, with Herrington, McKenney, Reeves and Oliver (2007) arguing that different research questions for each stage cannot "guide the investigation of the more significant educational problem" (p. 4092). For Bakker (2018), however, sub-questions which ask about the design are allowable, as long as the main research question is a research-focussed one.

This is an issue which I identified during the course of this research project: the relationship between the two elements of design and research during the research-design process. Of course, in a design-based research project the design element is integrated into the research, rather than a project where the design is paramount. (Bakker, 2018).

As this project is investigating the design of an intervention and its development from conceptual idea to the application and evaluation of teaching and learning resources, the questions in different iterations will have a different focus. Some questions were led by the design, which could be expressed as DESIGN-based research. Other questions, such as the evaluation iteration, were research led, expressed as design-based RESEARCH.

However, all of these questions were guided by and in service of the overarching research question. This question was identified from a review of research literature and framing of the research problem. This is important because Bakker's (2018) experience is that the emergent nature of DBR can "mask the fact that [researchers do not really know what they want to know" (p. 138). To ensure that the iterative process and sub-questions remained focussed on the main research question, each iterative cycle also contains a discussion about the main research question as well as the iteration-specific sub-questions to provide a tighter focus on the specific issues and areas under investigation at each given stage as well as furthering an answer to the main research question at each stage. This also allows for the design framework to be added to at each stage; this approach provides a middle ground between a pre-defined research agenda and a lack of research focus.

Despite the emergent nature of DBR, there are some central tenets of DBR that guide the nature of the iterations, and hence the research sub-questions. For example, trialling an intervention in a local context, scaling the design to other contexts and then evaluating the intervention is a standard DBR approach. Therefore the sorts of sub-questions that were asked have a basis in the overall research process even though they can have more of a design focus for certain iterations.

An overview of the iterations is provided below to give a clear summary of the overall project. The specific aspects of the study were not always determined in advanced but also developed as the study progressed. The structure of the iterations is as follows:

Literature Review

A review of the key areas of classroom dialogue:

1. Philosophy with Children

2. Community of Inquiry
3. Dialogic Theory
4. Dialogue in the Classroom
5. Critical Thinking
6. Argumentation

Iteration 1: Exploratory Fieldwork to develop the intervention

Having identified the focus of the research, informed by practice and the literature review, fieldwork was undertaken to develop a clearer focus on what an educational intervention to develop children's dialogic thinking would look like. Particular aspects of this fieldwork included how best to design an intervention which will be effective within the education ecosystem: what are the practical considerations which should be taken into account in the design of an effective intervention?

Iteration 2: Trial of concept of intervention

Iteration 2a was conducted after having generated an intervention as a result of the exploratory work, which was not yet trialled in authentic settings. In order to ascertain if and how it produces the desired effects, this iteration is divided into two: local and extended contexts. Iterations 2a and 2b were conducted off-set from each other in order to use the information gathered in the local context to for further revision of the intervention so that it is suitable for trial in extended contexts.

2a) Local context

This was conducted as researcher-led sessions, in collaboration with practitioners, to trial the concept and to identify successful aspects of the design and those which required revision. The outcome was to produce a resource pack which can be used independently by practitioners in extended contexts to provide further information about how the intervention works.

2b) Extended context

This consisted of teacher-led sessions using the resource pack produced as a result of the pilot. These sessions were taught independently of researcher involvement and the aim was to identify if the resources are sufficiently developed for teachers to teach the sessions independently so that children engage with the

resources in a comparable way. The outcome was to identify that the resource pack was successfully trialled for teacher and learner usability before the testing phase.

Iteration 3: Evaluation of the intervention

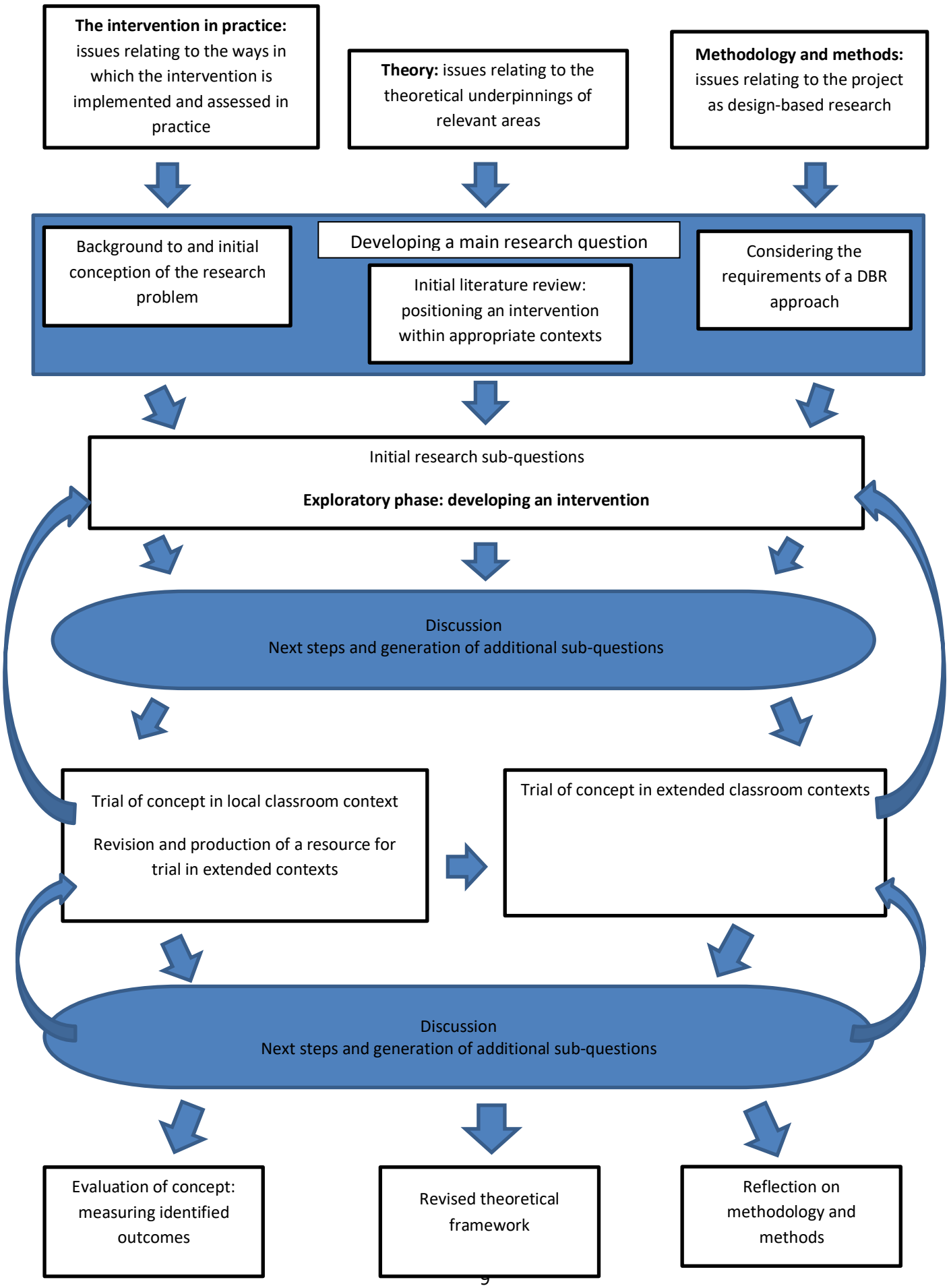
Following the production of a successfully trialled resource pack, teacher-led intervention sessions were carried out together with pre- and post-testing of the children which was undertaken individually and in groups of three, and the group work video recorded and analysed. Individual intervention sessions were also filmed. The outcome was to identify whether or not group scores had increased relative to individual scores in the post-test, and also to identify when children were engaging in dialogue, and if this correlated with higher test scores.

1.4. Research design framework

Figure 1.1. in this section details the proposed design for this research. Three strands have been identified: development and revision of the intervention for implementation in the education ecosystem; literature read and theoretical implications developed and revised; and ways in which the methods and methodology are conceived as a DBR study and how these can be developed. This is concordant with accepted practice in design research, in which theoretical issues and questions are addressed to be integrated with the development of the design in practice (Collins, Josepha and Bielaczyc, 2009). It incorporates a strand of development which reflects on the methodology, primarily because there is contention as to whether or not DBR actually can be considered a methodology or a collection of methods (Kelly, 2004, 2006).

I propose that taking a reflective approach to the methodology, successively integrating reflections on DBR with the other facets of the design can allow for a greater awareness of methodological possibilities and limitations within education research. All of these strands then inform the discussion and revision of the intervention from a combination of design, research and methodological perspectives, as well as the next iteration of research.

Figure 1.1: Research design framework



Chapter 2. Literature Review

Introduction

The literature review is divided into six key areas (that in parts overlap or stand in relation to each other) which were identified in the initial framing of the study as factors in children's classroom dialogue: Philosophy with Children (PwC), critical thinking, the Community of Inquiry (CoI), argumentation, dialogic theory, and classroom dialogue in practice. Philosophy with Children was my starting point, based on my teaching background and it's nature as a discussion-based pedagogy that connected thought and talk, and the open-ended nature of the inquiry was appealing in that it was not an area in which the subject matter was (likely to be) part of the formal curriculum. This is because my investigation focussed on the skills and dispositions of children's dialogic talk, rather than as an application of those skills into a specific curriculum area, to which children will bring prior levels of experience, aptitude and attitude.

PwC is explained and examined in section 2.1. Although uptake of PwC in English schools is increasing through the provision of training by specialist providers, there are a number of barriers to the uptake of Philosophy with Children in schools. These are primarily centred on the need for specialist teacher training, and the method which requires that children generate the questions for philosophical discussion. Philosophy with Children itself is overwhelmingly taught through the Community of Inquiry method, further explored in section 2.2. The Community of Inquiry provides a theoretical model (pragmatism) for the way in which knowledge is positioned, which also has implications for dialogic epistemology.

Conceptions of dialogue are considered in section 2.3. Dialogue itself can mean – at one level – having a talk with someone, yet as Wegerif (2007) claims, it also implies ontological (ways of being) and epistemological (ways of knowing) commitments to other beings in dialogue. While Bakhtin (1981) is commonly associated with dialogic theory, in this section I consider the reasons for which Buber's (1956) conception of dialogue could be a more useful one for dialogue in the classroom context. Following the theoretical consideration of dialogue, studies in the classroom – their aims, methods, and findings, are considered in section 2.4.

Critical thinking has been a problematic issue for those with a greater focus on inquiry learning (Hayes, 2015), but I contend that these concerns highlight problems with an individualistic conception of critical thinking. Moreover, excluding critical thinking entirely from inquiry poses a risk of a "pedagogy of relativism" (Martens, 2013, p. 164). Section 2.6 in this chapter examines argumentation and how it stands in relation to dialogic thinking. Section 2.7 considers the way in which the literature in previous sections suggests approaches for collaborative critical thinking, or dialogic thinking, including the ways in which claimed incompatibilities (Matusov, 2011) between argumentation and dialogic theories can be resolved.

The literature review concludes with a summary and a design framework developed from the literature which incorporates the high-level theoretical design principles which have been postulated from the review.

2.1. Philosophy with Children

Philosophy for Children originated in the US in the 1970s. Its founder, Matthew Lipman (1991, 1998, 2003), believed that the young people of the time were ill-equipped to participate in thoughtful, reasoned discussion about matters of national importance (for example the Vietnam war). Following Dewey's (1933) re-conception of logic as a social instrument (Daniel and Auriac, 2011), as opposed to the abstract logical reasoning of previous philosophical tradition, Lipman conceived of a programme of education which would give all schoolchildren the opportunity to think critically. He wrote a series of novellas with philosophical stories to act as a stimulus from which children could generate their own philosophical questions and hold a discussion with the guidance of an adult facilitator. This model is known as the Community of Inquiry (see section 2.2.) and offers learners the prospect of taking an active role in discussion, for example in the sharing and questioning of each other's ideas.

From this beginning, PwC has developed in theory and in practice. Englhart (1997) outlines three strands of developments in PwC – of which the continuation of Lipman's strand is just one. A second strand developed with Matthews (1980), who does not see the 'goal' of philosophy with children as one which promotes

developmental stages, but rather opens up spaces in which children can explore their own thinking. A final strand was a critical emancipatory one, in which PwC can disrupt the power relations between the powerful and the oppressed (e.g. Murris, 2016).

In recent years, the two latter strands are the ones which have been most developed, as Lipman's Philosophy for Children programme has been critiqued as reducing PwC to a critical thinking programme (Weber, 2012). This has provoked a demarcation between 'first' and 'second' generation PwC thinkers, and leading to PwC being described as 'in transition' (Vansieleghem and Kennedy, 2012). This shift is partly due to the reconceptualization of childhood within the education system toward a more child-centred approach (Kohan 2012, 2014) as well as a questioning of why PwC is a desirable practice. The latter issue has led to PwC being criticised as an 'instrumental' practice in schools (Biesta, 2011), as it can be seen as providing children with certain sought-after skills and attributes to meet educational ends. Others (for example Echeverria and Hannam, 2016) have argued that the methodology of PwC practice allows for children's development in broader terms than the instrumentalist view of progress toward prescriptive outcomes (see also Kerslake and Rimmington, 2017).

Lipman (2003), however, does not claim that critical thinking is the only mode of thinking that is present in ideal PwC inquiries. Caring thinking means not only behaving in a caring manner toward the subject of discussion but also one's manner of thinking. Lipman gives the example of a tutor providing feedback: they attend to the way in which they address their comments to the student, but also to the way in which they construct the feedback because they have a professional responsibility to do so. Both of these are forms of caring. Therefore, for Lipman, aspects of caring thinking are a key part of PwC communities of dialogue. This moves into ontological aspects of dialogue (ways of being), as participants seek relationships with other participants in dialogue. This aspect of thinking has parallels with dialogic thinking, which is addressed in a further section.

It is clear, then, that Lipman did not intend for PwC to become part of a school curriculum for instrumental ends. By several commentators (Vansieleghem and Kennedy, 2012; Kerslake, 2018) it is seen as standing in opposition to a results-

driven focus in Western schooling (about which there has been much opinion offered in England in the media and by educators). Despite this, there has been a tendency in research to frame PwC in relation to core subjects (Gorard, Siddiqui and See, 2017), specifically the way in which PwC improves performance in key subjects such as English and maths. This may be a way of encouraging teachers to include PwC in an already crowded curriculum.

It is also important to consider another contentious issue in PwC. Although children may learn to develop critical and caring thinking in PwC sessions, whether or not they are actual 'doing' philosophy is a different matter that has received attention in the field.

2.1.1. 'Philosophy' in Philosophy with Children

For White (2012), PwC practice is divided into two stands: strand one is the more common, certainly in England, and is predicated on Lipman's original Philosophy for Children programme. The emphasis in this strand is on the inquiry rather than the philosophy, White argues, as the questions raised for discussion are generated by the children, and facilitated by the teacher who may only have a small amount of philosophical training. For example, SAPERE (Society for the Advancement of Philosophical Enquiry and Reflection in Education) – a PwC training provider in the UK – have a level one training course lasts which lasts for two days (see section 2.1.2. regarding SAPERE and the other PwC proponents mentioned here). Strand two, which is less common (White cites McCall, 2009 as a proponent of this strand, as well as Peter Worley's work with the Philosophy Foundation), requires that teachers have more extensive philosophical training, and it is the teachers who organise the topics for discussion.

White has a point when he states that perhaps a better title for Philosophy for Children would be 'Various Sorts of Reasoning for Children' (p. 459). Although this sounds provocative, it is a sentiment which does actually seem to reflect the concerns of commentators such as Weijers and McCall (2016) who insist upon certain criteria being fulfilled, such as evidence of children's Socratic questioning, for PwC to earn the name. Critical thinking, democratic thinking and so on may be

valuable, but they are not philosophical thinking because they do not take into account the epistemology of the discipline of philosophy.

However, there is also a demarcation between academic philosophy being taught (as it sometimes if from age fourteen in the UK) and philosophising as a process, which teaches children from a much younger age to recognise and apply the hallmarks of philosophical thinking. Worley's (2010, 2016) approach to PwC is to introduce a stimulus and then to provide the children with a question in order to ensure that the resulting discussion has a philosophical basis. This is in contrast to Lipman's approach, expanded upon previously as, for Worley, it is the questions that the children have *of the original question* that are of key importance in unpacking the concepts of philosophical thinking. These questions, which are founded on a primarily philosophical one, serve to highlight assumptions and concepts arising from the original question. Costello (2010) views Philosophy with Children as "an endeavour to develop, clarify, justify and apply thinking" (p. 2), which supports the idea of philosophising as a process of reasoning, and also indicates that this approach in itself introduces children to the disciplinary boundaries of philosophy (Costello, 1995).

2.1.2 Philosophy with Children practice and research

There are two main bodies which provide PwC training to teachers in the UK, and given that such training does not form part of the initial teacher training programme in the UK, they train a large number of teachers who then undertake PwC sessions in their classrooms. This section focuses on practices in England and the UK, but also in a global context.

SAPERE (Society for the Advancement of Philosophical Enquiry and Reflection in Education) provide teacher training primarily to in-service teachers. Schools themselves pay for this training, which often takes place on school in-service training (INSET) days (when children are not in school but staff are to receive professional development) The level one course lasts for two days, but staff can then take additional courses to receive levels two and three. Schools which embed PwC can receive school awards of Bronze, Silver and Gold, presenting a body of

evidence to SAPERE to be assessed. Their approach is based on Lipman's model in which children themselves generate the questions for discussion and then the inquiry proceeds from the selection of one of these questions in a number of steps, including personal reflection and concept-questioning, before the group try to reach consensus.

One of the best-known recent studies into Philosophy with Children is a randomised control trial conducted by the Educational Endowment Fund (EEF, 2015) and evaluated by Durham University (Gorard, Siddiqui and See, 2017) which looked at children's curriculum attainment following a philosophy with children intervention. Children who received the intervention in school years four and five then went on to make additional gains of between two and four months in English and maths when taking their SATs at the end of year six. This has been heralded by the SAPERE as a good indication that philosophy can allow children to improve in curriculum subjects with no additional input in those specific subjects.

The Philosophy Foundation was founded by Peter Worley and also provides teacher training to in-service teachers. The Philosophy Foundation also carry out PwC sessions in schools themselves. Their approach differs from that of SAPERE as the questions for discussion are provided by the facilitator, as described previously in this section. Despite the difference in the approach to questioning, both of these approaches begin with a stimulus, which can take various forms: text-based (poetry, extract, story), other media (video clip, piece of music) or an object.

Both of these approaches also refer to their practice as a Community of Inquiry, evinced from the beginnings of PwC as a mainstay of its pedagogical approach (Lipman, Sharp and Oscanyan, 1980; Lipman and Sharp, 1978; Sharp, 1987). However, the Community of Inquiry requires further elaboration, including the way in which knowledge is considered (epistemology), and this has its own section which follows this one.

Other Philosophy with Children practice

McCall's (2009) work focuses on philosophy with children as young as five (although she also carries out work with older children). I focus on McCall's work particularly here because her PwC work highlights the role of the teacher as an

expert in philosophy, which is a barrier to PwC in English primary schools. She refutes Piaget's cognitive development process in young children, which she sets out in simplified terms in her book, particularly highlighting that children younger than seven, in the 'preoperational stage' (p. 19) are unable use logic in their thinking, or to understand that other people think differently from themselves. Even during a later stage, the 'concrete observational stage', from ages seven to eleven, children are unable to think in abstract concepts, according to Piaget.

This thesis does not have a focus on psychological cognitive development theories such as those of Piaget and Vygotsky, however McCall expressly cites examples from her own practice of philosophising with children which, she claims, provide counter-evidence to Piaget's stage theory. Examples of her claims include that children can:

- Use formal operations
- Reason about abstract philosophical concepts
- Demonstrate an ability to place themselves in the position of other people

(p. 23)

Not all of her arguments are convincing, such as when she imposes formal logical structures onto children's dialogue in order to demonstrate that children are capable of using formal operations (pp. 24-27). The children's dialogue (which involves ways in which one could prove that a robot is a robot) has formal structures imposed upon it by McCall in a way which seems that, firstly, she is doing a great deal of work in order to make her point, and secondly, seems far removed from the children's intentions in the dialogue.

Moreover, McCall then seems to extrapolate this practice of formalising the children's dialogue to the role of the facilitator in the wider sense. She rightly draws attention to the "complexity" (2009, p.16) of the role of the facilitator – because managing a group of thirty children in any type of whole-class discussion is a challenging one for a teacher. Yet McCall goes on to say that the facilitator of a philosophical discussion "needs a background in both philosophy and logic to be able to do the instant analysis that is required to structure the dialogue" (p. 33).

This is a contentious point, not least because in English primary schools, teachers are generally not subject specialists. Teachers are expected to teach a broad range of subjects without necessarily having experience in that subject themselves (for example, music, additional languages, dance). Therefore claiming that primary teachers need a background in philosophy and logic is limiting to the expansion of Philosophy with Children. Perhaps this approach also misunderstands the nature of Philosophy with Children as a discourse which can or should replicate the formal logical of analytic philosophical arguments.

Refuting the basis of philosophy as formal logic is the approach to philosophy in schools taken by Ekkehard Martens (2009), who makes the distinction between philosophy (as an academic discipline) and philosophising (as an activity). The distinction is that in the first case, philosophy as an academic discipline is concerned with the "knowledge, theories and products" (p. 7) of philosophy, while philosophising "refers to the cognitive process" (p. 7). In order to structure philosophising in the school context, Martens divides it into five categories (p. 504):

Phenomenology – looking

Hermeneutics – understanding

Analysis – deepening

Dialectics – back and forth

Speculation – imagining

These five categories are described as the Five Finger Method; a philosophical dialogue begins with the phenomenological act of concept examination, when "something previously taken for granted becomes problematic" (p. 504). This becomes the starting point for further exploration of a newly-discovered issue using each of the other means of philosophising.

It is interesting to consider McCall's UK-based position with Marten's Germanic one, because Germanic PwC practice has developed from a Continental philosophy position, whereas McCall's approach is from an Anglo-American analytic one. This has consequences for the way in which PwC is perceived in certain traditions. For example, Weber (2012) is clear that the differences in these positions has led to

German academics rejecting Lipman's conception of philosophy as that of a "disembodied head" (p. 79), preferring the whole-child approach which, she argues, follows from that Continental position, and is augmented by a cultural acceptance of talk as a means of education. The basis in the analytic tradition, despite Lipman's attention to caring and creative thinking, is the reason that the critical thinking element is considered focal and the reason why it is criticised.

2.2 The Community of Inquiry

The Community of Inquiry has its origins in the work of C.S. Peirce, in reaction to Descartes' view of knowledge as constituted by an inner space of the mind (Pardales and Girod, 2006). The Community of Inquiry was originally referred to by Peirce in terms of scientific knowledge, which, he claimed, could not be generated and confirmed in the mind of one person alone, but was achieved through the discourse of a community of scientists.

Moreover, Peirce (1955) claimed that in epistemic terms (what can be known), the issue of community is a key one because he argued that reality is independent, and we can come to develop beliefs about it through our engagement in a community. Although he did not believe that reality was independent of thought itself (Smith, 1983), he claimed that it was independent of "what you or I or any finite amount of men may think about it" (p. 39). The purpose of a Community of Inquiry is to investigate claims and assumptions that are made, and that reality is constituted by the outcome of these investigations. This does not mean that these beliefs are reified, but rather that they are taken as settled beliefs for the moment. This enables people to act in the world, as one cannot "doubt everything all at once" (Pardales and Girod, p. 300)

In denying the Cartesian duality of knowing for certain or relinquishing all claims to knowledge, Peirce instead perceived doubt as "simply a necessary fact of being in the world" (Ellerton, 2016, p. 112). Thus inquiry is a process of doubt, grounded in epistemic fallibilism, and it is this which in fact enables the inquiry to take place at all. Only by rejecting the duality of absolutism and relativism can beliefs be held cautiously, to be doubted, questioned and reformulated as further beliefs to be held

tentatively. Dewey (1933) summed this up as: “there is no belief so settled as to not be exposed to further enquiry” (pp. 8-9).

The CoI (here referred to as the Community of Philosophical Inquiry, or CoPI) as an education practice originated with Lipman (2003), and is commonly used within PwC practice. Lipman set out five stages of the process (pp. 101-103):

1. The offering of the text [reading a philosophical story together]
2. The construction of the agenda [children raise questions prompted by the text]
3. Solidifying the community [children discuss the questions as a dialogue guided by an adult facilitator
4. Using exercises and discussion plans [facilitator introduces further activities to deepen the inquiry]
5. Encouraging further responses [e.g. self-assessment of philosophy practice or artwork]

For Lipman, the CoPI is a pedagogical strategy for remedying what he calls the “stupendous category mistake” (p. 20) that Dewey had observed about educational practice: the end-point of inquiry is confused with the process of inquiry. The aim of traditional education is for children to acquire as many of these end-points as received facts as possible by the end of their schooling. This has also been referred to as the ‘transmission’ model of education (Freire, 1972), in which knowledge is transmitted from teacher to learner. As part of the rise of critical pedagogies since the 1970s, Freire and others (see Schwarz and Baker, 2017) critiqued this model for positioning learners as passive receivers not only of knowledge but also as subject to traditional power structures and cultural biases.

In contrast, what Lipman refers to as the “reflective paradigm of critical practice” (p.18), takes problematic material for a starting point as the material of inquiry. In the case of philosophy, this might be conceptual difficulties or contradictions; Lipman wrote a series of philosophical novels which deal with many of philosophy’s traditional domains: ethics, aesthetics, metaphysics and so on, through the subject matter of, for example, animal rights, personal identity, divorce, racism and justice

(for example Mark, 1980; Elfie, 1987). He claimed that it is through engagement with these problematic issues that children, led by the examples of the children in the texts, come to feel the "twinge of doubt or puzzlement" (Lipman, 2003, p. 21) which is the starting point for any meaningful inquiry.

Eccheveria and Hannam (2016) emphasise the importance of community, positioning the CoPI as "advancing communicative rather that individual notions of autonomy" (p. 3), which can be seen in Millett and Tapper's (2012) reference to inquiry practice as CPI, where the C stands for collaborative. The community of the CoPI is therefore one in which individuals come together in an "intentional speech community" (Vansieleghem and Kennedy 2012, p. 266) in which there is an inquiry into a specific issue at which the inquiry is aimed. For Murris (2016), the concept of autonomy itself is an outdated one – a "metaphysical illusion" (p. 105) – because there is no 'I' in the sense of a bounded self. Instead the relations of a community are paramount and, indeed, necessary for inquiry as they establish "powerful bonds of trust, collaboration, risk-taking and a common purpose" (Splitter, 2000, p. 12). In the following section on dialogue, this concept of the 'I' as existing in relation to other beings is expanded upon.

These considerations of community and the role of the individual within it are important ones. The concept of the individual within the community requires the individual to be both an individual and part of a collective at the same time. This is concordant with Mercer, Wegerif and Dawes' (1999) findings in the *Thinking Together* programme, in which they identified three types of talk in inquiry activities: exploratory, disputational and cumulative. In the latter, the harmony of the group is preserved at the cost of critiquing others' ideas to advance inquiry. With disputational talk, individual contributions take precedence over the advancement of the group. In the case of exploratory talk, however, individuals share their own ideas but also listen to others and respond by modifying their own thinking. Cumulative talk can therefore be characterised by 'too much community'; disputational talk by 'too much individual'; and exploratory talk by a productive combination of both. Having considered inquiry as a collaborative activity which is carried out through dialogue, I now turn to the literature on dialogue itself.

2.3. Dialogue

As Wegerif (2008) argues, the word dialogic can be a difficult one, often taking the meaning of "pertaining to dialogue" (p. 348), in the sense of conversation or inquiry. The word comes from the Greek *dia* – through and *logos* – word, discourse, or reasoning (Schwarz and Baker, 2017). Despite the difficulties in identifying a single definition of dialogic (Howe and Abedin, 2013; Linell, 2003), interaction with at least one other voice seems to be a clear criterion for dialogism. Alexander (2004, 2008) takes this view of dialogue, in the sense of conversing with another, referring to dialogue in pedagogical terms, championing classroom talk as a pedagogic strategy to promote the sort of talk that leads to better learning outcomes. For Wegerif (2007), however, this is at a superficial level and he highlights the importance of the identification of an underlying dialogic ontology (ways of being) in order for interaction to be truly dialogic. He identifies four different meanings of 'dialogic', (pp. 13-22):

- Pertaining to the activity of dialogue
- Texts which are not monologic
- As epistemological paradigm
- As social ontology

The first of these refers to dialogue in many senses of the term, including the broad array of activities which incorporate spoken language between participants, but can be used in a non-specialist sense. Wegerif argues that 'dialogic' implies a technical term when referencing Bakhtin, Buber and other theories of dialogue. The second of Wegerif's categories is a particularly Bakhtinian concern, although others, such as Maine (2014, 2015) also consider dialogic texts. Bakhtin was foremost a literary theorist, considering Dostoevsky's work as examples of dialogic novels.

For Wegerif, these two meanings are also supplemented by dialogue as an epistemological paradigm and a social ontology. As Linell (2003) also writes, "'Dialogism' is a name for a bundle, or combination, of theoretical and epistemological assumptions about human action, communication and collaboration" (p. 2). In the epistemological sense, reality is not denied, but is constituted through dialogue "against the background of the world" (Linell, p. 3). This background

provides references points which contextualise the meanings and knowledge which are created through dialogue.

Commenting on the ontological sense of dialogue in an education context, Mishra (2015) states that there is a difference between a pedagogically dialogic environment and an ontologically dialogic one. In the former, dialogue is used as a pedagogical tool to mean a discussion, in the latter it means considering others as independent subjects with whom one dialogues without the intent of subjugation. Dialogue is therefore more than just talk or pedagogical means for stimulating talk: for Holquist (1990), commenting on the Bakhtinian perspective, dialogue is multifaceted, but “can be reduced to a minimum of three elements…an utterance, a reply, and a relation between the two” (p. 38). The relation is the understanding that "the body is not a self-sufficient entity; it needs the other, his recognition and his formative activity" (Todorov, 1984, p. 96) to make meaning of an utterance. Therefore through the word, in dialogue, the self is brought fully into being.

The implication of this is that in dialogue, something else is happening that is more than the words that are being said. The dialogue does not begin with the first utterance and end with the last word in the dialogue – and commenting in Bakhtin’s (1981) work, Holquist states that in dialogue "there is neither a first word nor a last" (1990 p. 39). This is because people bring to dialogue the dialogue that has preceded it: every utterance is a rejoinder to dialogue that has already taken place, furnishing individuals with “partial buildings, borrowings and redirections” (Weinstein and Broda, 2009, p. 799).

Therefore, the commitments entailed by dialogism are clear here: true dialogue is not only an instrumental practice aimed at fulfilling educational criteria by developing skills for a particular end, but one which involves the cultivation of dialogic dispositions. It is the attention paid to the dispositional and relational conceptions of dialogue which mark the significance of the term dialogic as a position. The dialogic relationship is a very particular sort of relationship between entities. For Buber (1923/2013), there are two sorts of relationships, the Ich-Es (I-It) and the Ich-Du (I-Thou). In German, the ‘Du’ form of ‘you’ is the familiar form, but it is by convention rendered into English as I-Thou, presumably because modern English lacks the distinction between formal and familiar forms of the pronoun. However, it is

sometimes rendered as I-You (Avnon, 1998). The ‘It’ of the former sort of relationship should also be understood as ‘he’ or ‘she’.

Guilherme (2015) explicates Buber’s fundamental arguments about dialogue in three points (p.822-823). According to Buber, human beings:

i. are relational beings;
ii. are always in a relation with either other human beings, or the world, or God;
iii. possess a two-fold attitude towards other human beings, the world, or God, which is indicated by the basic words I-It (Ich-Es) and I-Thou (Ich-Du).

With regard to the final point (iii), Buber makes clear that there are only these two forms of relationship: the ‘I’ by itself (or Thou or It) does not exist because when we say ‘I’ we are doing so in relation to another. Therefore these two forms of relationship are the only forms of existence. Avnon (1998) writes that ““one may summarize this point by suggesting that the difference between the I-You and the I-It relation to being is embedded in the hyphen” (p. 40). This is resonant with Holquist’s (1990) comment on Bakhtin’s conception of dialogue that an essential component of dialogue is the relationship between the utterance and the reply.

We exist at a relational level with others, but the I-It and the I-Thou forms express very different sorts of relationships. The I-It relationship is the inferior because it is a bounded relationship where the ‘It’ is experienced incompletely by the ‘I’ and so becomes an object. The ‘I’ may see part of someone, categorise them, focus on particular qualities, but it is not a whole relationship. Buber defines this sort of relationship as when “man travels over the surface of things and experiences them. He extracts knowledge about their constitution from them: he wins an experience from them” (p. 4).

The I-Thou relationship, however, between people, is “open and in the form of speech” (p. 5). When we interact with another in a relation which is open and does not seek to classify or objectify. It is a relationship that exists in the present and so is not fixed or determined: there is infinite possibility. It is also a relationship which is hard to describe, because the very nature of that description would then mean that

the I-Thou nature of it would cease and the relationship would become I-It. Buber acknowledges this, writing that “the meeting that confronts me is fulfilled, and enters the world of things, there to be endlessly active, endlessly to become It, but also endlessly to become Thou again” (p.10-11). This is because the I-Thou relation is “eternal” (p. 70), and the possibilities for it exist even when the actuality of a particular relation may be, at that moment I-It.

However, the openness of an I-Thou relationship is, between people, able to be maintained through speech: “I and Thou take their stand not merely in relation, but also in the solid give-and-take of talk” (p. 71). This is why true dialogue is more than conversation with someone, but also, in Wegerif’s view, is also a social ontology which requires a commitment to regard other beings as beings in their own right rather than as constituted by the views projected onto them by another. Bakhtin (1984) gives an example of the latter in Dostoevsky’s (who was, according to Bakhtin, the forerunner of the dialogic novelist) work - the example is of a character in a short story, who himself reads a story in which he recognises himself: in the example given by Bakhtin, the character feels that “his entire life had been analysed and described, that he had been defined once and for all, that he had been left with no other prospects” (p. 58). He therefore cannot enter into dialogue because there is no option of the infinite possibility of dialogue, he has been “finalised” (Frank, 2005, p. 966), even “as if he were already quite dead” (Bakhtin, p. 58).

This example, and the concept of finalisation, occurs when others are subject to “categorisation, conceptualisation, manipulation and estrangement” (Dresner and Siebers, 2019, p. 117). For Buber, a life with no possibility of the I-Thou relationship is not a full human life. However, a key aspect of Buber’s conception of dialogue is the acknowledgement not only that human relationships will continue to oscillate between the I-Thou and the I-It, but also that the I-It relationship is also necessary. One ‘turns away from’ the other in an I-It relationship, and this can provide “psychological distance” and “a sense of being different” (Guilherme, 2015, p. 824).

In addition, the numerous oscillations between I-Thou and I-It are transformative, so that the boundaries between the two are not sharply delineated. In most situations in human life (barring such examples as when people are utterly subjugated), there remains the possibility of the I-Thou relationship and one’s previous experiences of I-

Thou relationships will shape the I-It. Therefore the oscillation between the two relationships is important because it allows for transformation.

The following section continues to considers theories of dialogue but does so within the context of the classroom, as this presents particular challenges to the conceptions of dialogue that have been expressed so far in this section, particularly how I-Thou relationships can come to be in the institutional context of a school.

2.4. Dialogue in the classroom

This section builds on the dialogic theory presented in the previous section by considering the ways in which it pertains to classroom practice and theories of education more broadly. Further subsections then go to examine other classroom research which has been carried out in the field of dialogue.

2.4.1. Applying dialogic theory to classroom practice

As introduction to this segment, it is worth reproducing a paragraph from Kramer's (2013) book as an illustration of the less positive element of dialogic theory in practice:

> In 1923, Ernst Simon— Buber's close friend— sharply criticized his teaching practices. He was especially critical of the way that Buber conducted a seminar in a reciprocal I-Thou style, as if participants shared full equality with the teacher. Simon wrote that in the seminar, 'there developed a partly hysterical, somewhat shameless barrage of questions' along with a 'psychological slopping around'. Simon said to Buber: These eruptions were caused because 'you have given no thought to your audience'. (p. 29)

It would have been interesting to know what Buber's thoughts were as he taught that class, if he recognised what his observer did. I can remember, during my own teacher training a feeling of high anxiety at the possibility of losing control of the class and not being able to get the students to follow any directions.

This example highlights an issue with dialogue in practice: classrooms are, as is widely known, complicated places. In the UK, there are up to 30 children in a classroom, all of whom will have differing educational and social starting points and needs. The teacher must foster the education of all of these children, whilst also considering the school context in which they work. The school may have had a poor Ofsted (school inspection) report, and the school's priority therefore may be to address any issues which have been raised. These priorities may not accord with the teacher's own. To this must also be added the other adults in the classroom, such as teaching assistants, the requirements posed by standardised external testing (taken at age 7 and 11 in Years 2 and 6 respectively in English primary schools), and other stakeholders in the education system: school governors, the senior leadership team, and other schools where the school is part of a larger academy trust comprising many schools (as is common with many UK schools currently).

The challenge is to foster dialogic relationships against this contextual backdrop. It is clear that a great deal of what might be called classroom dialogue is not dialogue in the dialogic sense of the previous section. There are routine instructions given about classroom procedural matters, information giving, and so on. Dialogue in the sense of the dialogic must also include the relational element between those who take part in dialogue, and it is not always clear how teachers can address themselves to the many types of interaction they have in the classroom. Teachers must impose standards of behaviour (to avoid incidents such as the one reported in Buber's classroom) and give directions to ensure routine tasks are carried out (such as arriving at school in the morning or getting ready for lunch); children must demonstrate certain behaviours which conform to expectations of the social context (Edward-Groves and Davidson, 2020). This necessitates teaching practices which can be seen as authoritarian. In primary schools, the class teacher who is responsible for regulating this (including sanctions) is also responsible for allowing children to develop as individuals, including giving them creative freedom and a sense (real or perceived) of autonomy over their learning and choices. Education can be seen as a series of experiences – for both teacher and learner - which are in tension with each other: this is challenging.

The essence of the preceding paragraphs is that in an educational context, dialogue takes place in the social structure of a school and this has implications for

the kind of relationships that can be had between those in dialogue. Dresner and Siebers (2019) reference the American philosopher, Davidson, who maintained that spoken communication is intersubjective between parties: the meaning arises between them and is not dependent on social structures or conventions. Spoken communication is also constitutive of meaning, and therefore mental content is not merely expressed through language but is constituted by it. This has resonance with the PwC/CoI approach in which an inquiry generates new meaning through interaction by the community.

The claim that intersubjective interaction is not dependent on social convention is a difficult and contested one. There are several philosophers who have claimed that to make a speech utterance is, by its very nature, an act of convention. Language functions as a "shared symbolic system", and individuals having a share in that system are able to communicate meaningfully with others. (Harre and Gillett 1994 p. 44). Wittgenstein wrote "thinking is essentially the activity of operating with signs" (Blue Book, cited in Harre and Gillett, 1994, p. 50). Wittgenstein compared this to drawing a map that will help us find our way around in the field of concepts and conceptual structures (Wittgenstein, 1961, 4.01). Dummet (1981) also maintains that speech acts are performed and understood through conventions.

Therefore, two issues exist here: language as a social convention and schools as examples of social structures. These are not independent of each other, as there is conventional language that is used in schools to enact the social structure, such as 'line up 'or 'be quiet'. One of a teacher's first tasks in a classroom is to use language in a way that will inculcate in the class the norms of the social conventions of the school. For example, in a Key Stage 1 class in which I was observing, the teacher taught the class the rhyme 'zip it, lock it, put it in your pocket', to which the children mimed zipping up their mouths, locking them and putting the key in their pocket. This was done whenever the class prepared to line up to leave the room so they would be quiet. In this case, a new language convention was taught to the children but its function was to uphold the social expectations of the school.

There have been attempts to resolve this issue. Bohm (2004) concedes that our societal structures are so large that we require some kind of hierarchical structure to make sense of them (similar to the conventions of language). However, he claims

that the result of this is the creation of the person-as-object. According to Bohm, it is an issue that is prevalent in today's society that treats everything as a separate object, including other people. As a result we perceive everything as fragmented: 'this is my thought', that is your thought', and we have come to give too much importance to the content of the thought and not enough to the processes of thought. This is also part of Lipman's concern about schooling in a PwC context.

Bohm's response is to highlight the distinction between 'partaking of' and 'partaking in' dialogue. 'Partaking in' dialogue means offering your contribution to a larger whole, while remaining an independent being. This is the commonly found means of interaction that is referred to previously, in which people see their thoughts as separate from each other's. For Bohm, it affects the way that we are in dialogue with each other because people aim to convince each other of the correctness of our own thoughts and so see each other as objects of persuasion or argument. The other form of dialogue, 'partaking of', refers to becoming part of a larger whole through dialogue to create a sense of oneness. In this respect it is the ideal form of dialogue, and akin to Buber's I-Thou relationship.

However, Bohm continues to acknowledge that societal structures must necessarily exist and that 'partaking in' dialogue is a necessary part of being in the world. He phrases his approach to addressing the tension between 'partaking of' and 'partaking in' dialogue as "participatory consciousness" (p. 30) in which "each person is participating in, is partaking of the whole meaning of the group and also taking part in it" (p. 31). By this he means that individuals move between a "collective mind" (which shares the commitment to the group) and the "individual mind" (which has its own opinions and brings these to the group). There is no contradiction here, for Bohm, because the key to this is that the flow moves constantly between them. Again, this is commensurate with Buber's concept of oscillation between I-Thou and I-It relationships.

Buber's concept of dialogue additionally has resonance with Bohm's as, Schwarz and Baker (2017) write, for Buber "the encounter is both event and eternity" (p. 27). There is a dialogue taking place as part of a specific event, but a larger dialogue that goes beyond any specific participants and time. Wegerif (2007) expands on this, in the context of the role of the teacher, writing that "aim of a dialogic approach to

teaching is to maintain a relation between the foreground figures that are being taught and the background field of possibilities from which they emerge" (p. 73). Both Buber and Wegerif's comments reveal a duality in encounters over time, from the I-It relationships which Buber writes characterise interaction with institutions (which the teacher sometimes necessarily represents), to those which are part of the larger dialogue of (creating meaning in) educational endeavours rather than (the social structure of) schooling. Buber and Wegerif provide a glimpse of the means by which a teacher can at one moment tell a child to go and hang their coat up (in an authoritative capacity, perceiving them as a child who has not yet hung his coat up), and in the next genuinely value their contribution to a class dialogue. The oscillation between the 'foreground figure/event' and the 'background field/eternity' allows for different types of interaction to take place throughout the classroom encounter. Together, these different types of interaction make up dialogue and all are necessary for being able to live today in the kind of societies that are characterised as Western.

The following section gives an example of how dialogue within classrooms can come to be established, taking into account both the 'partaking in' (I-It) and 'partaking of' (I-Thou) forms of dialogue.

2.4.2. Principles of dialogue in education

Bohm concedes that combining the 'partaking of' and the 'partaking in' dialogue into participatory consciousness is not an instantaneous event. In the beginning of any group coming together, there are individual minds which, merely by virtue of proximity, do not participate in dialogue or the common experience. Therefore there should be "principles" (p. 32) of dialogue which can guide individuals toward the collective mind experience in which they become sensible of the tenet of dialogue that: "everybody wins if anybody wins". This is the role of education, then: for teachers and children to come to share the principles of dialogue, and the role of pedagogy to find ways of doing this.

From personal experience at a practical level, often in schools the collective at the institutional level is prioritised at the expense of the individual. Many schools and individual classrooms have a charter which is established at the start of the school

year. These contain statements such as ‘I will respect others’ or ‘I will do my best’. Children are encouraged to ‘sign up’ to these statements without any real consideration or exploration of what concepts such as ‘respectful’ mean. This is an imposition of a common experience which does not permit true dialogue.

The heading for this section is taken from Bohm’s terminology of how individuals come to have a collective experience. A more common term for these principles of establishing common ground during dialogue is ‘talk rules’ (Mercer, Wegerif and Dawes, 1999). Talk rules should be established by children and teachers together before dialogue takes place. These are not only concerned with behavioural expectations such as being quiet when someone else speaks but also cognitive ones such as verbal participation to justify one’s ideas.

Lambirth (2009) makes the salient point that ground rules for talk are normative – he quotes directly from Mercer and Littleton that ground rules for talk embody principles which are “highly valued in many societies, particularly our own” (Mercer and Littleton, 2006 in Lambirth, p. 426). Lambirth’s contention with a normative view of what constitutes good talk practice is that what good talk practice actually means is that which is practiced by the dominant hegemony, which in the education system means the middle classes. He draws on Bourdieu and Passaron’s concept of cultural capital to identify how the process of education is one of “social reproduction of already dominant cultures” (Lambirth, 2009, p. 428). Therefore the *Thinking Together* programme, developed by Dawes, Mercer and Wegerif (2003) to establish talk rules is a form of mediation designed to allow all children to learn to use an appropriate discourse for school that is grounded in political and socio-cultural origins.

The differences in communicative competencies which are already evident by the time children enter formal schooling at the age of four are well-documented, and have already been noted (NLT, 2016). Lambirth’s primary criticism of the work of Mercer and his colleagues is that this dimension is overlooked in the results of this work, with a focus that Lambirth claims is “purely on the cognitive effects of their intervention” (2009, p. 433). There are also social effects to take into account, such as the effect on children of marginalising the ways which they have learned to talk in other contexts outside of school.

No matter the rules the children actually generate, they will be steered toward a set of rules that espouses these principles, making the negotiation a farce. On the face of it, this is true: it would be an unusual dialogue in which talking over other people, not listening to others and not valuing each other's ideas was taken as the norm. However, this example provides an instance of how the dialogue allows beliefs to be held tentatively, to be questioned and explored. In such a case a child could vehemently object to the talk rules and insist on her own. A facilitator could agree to try those rules, and then engage the group in a critical discussion of them. It is true that dialogue does require some acceptance of a shared set of values but rather than a fixed and unchanging imposed set of rules, dialogue can allow for reflexive consideration of itself. As Cam (2014) argues, rules within the communities of inquiry can be heuristic and strategic, dependent on context.

2.4.3. Research into classroom dialogue

This section considers academic research which has been carried out into classroom dialogue and draws together commonalities from these studies to provide further detail about the characteristic of classroom dialogue.

Philosophy with Children is considered to be an example of a dialogic pedagogy (Phillipson and Wegerif, 2017) because, in a PwC context, Lipman, Sharp and Oscanyan (1980) suggest that considering thinking as something "private and internal" (p. 22) is detrimental to pedagogy because thinking remains a mysterious process which it is difficult to understand and therefore make apparent and improve. They further make the claim that "the common assumption is that it is reflection which generates dialogue, when in fact, it is dialogue that generated reflection" (p. 22). This perspective explicitly makes the link between thought and dialogue, with an emphasis on the learning that takes place through dialogue. This has been researched in a number of studies in the last decades; Howe and Abedin (2013) conducted a review of studies which had investigated classroom dialogue in the last four decades, which included 225 studies, so there is clearly a sizable body of research.

Vrikki, Wheatley, Howe, Hennessy and Mercer (2019) carried out an investigation into 'dialogic moves' in primary classroom talk. Conducting a review of a number of studies into features of classroom talk, including Nystrand *et al* (1997), Michaels, O'Connor and Resnick (2008) and Littleton and Mercer (2013), they summarise the following commonalities (p. 86):

- invitations that provoke thoughtful responses (e.g. authentic questions, asking for clarifications and explanations);
- extended contributions that may include justifications and explanations;
- critical engagement with ideas, challenging and building on them;
- links and connections;
- attempts to reach consensus by resolving discrepancies.

However, the authors also highlight that a "generally participative" disposition (p. 86) is also required, which includes features such as listening to each other's ideas and a classroom culture which is focussed on fostering the sort of talk summarised above. This is commensurate with Wegerif's perspective of the dialogic as a social ontology, but this could pose a challenge to teachers if, despite their efforts to include activities which foster the sort of talk moves suggested, children are not receptive and do not participate.

Hennessy *et al* (2016) use the term Dialogic Teaching and Learning (DTL), setting out a number of criteria which evidence that DTL is occurring:

a) Harnesses the power of language to stimulate and extend students' understanding, thinking and learning

b) Is collective, reciprocal, supportive, cumulative and purposeful

c) Engages in social modes of thinking where possibilities can be explored collectively through creative problem solving framed by open-ended or authentic questions/tasks and reasoning can be made visible to others

d) Encourages inquiry and equitable participation, where all, including teachers are seen as co-learners who construct knowledge jointly

e) Is open to new ideas and critically constructive, where negotiation of perspectives allows joint problem solving

f) Promotes the creation of environments where diverse voices can be expressed, explored, contrasted, challenged, cumulatively built upon each other and synthesised, allowing analysis, transformation and reconciliation of underlying points of view

g) Brings into question the widely observed predominance of traditional and monologic educational practices where only one voice (primarily the teachers) tends to be heard, legitimised and sometimes imposed. (p.18)

These criteria highlight that dialogic learning is also connected to dialogic teaching, and explicitly states the duality of the role of the teacher who should be considered as a learner alongside the children, but also is responsible for the creation of a classroom environment where a multiplicity of voices can be heard.

Rojas Drummond, Mazon, Fernandez-Cardenas and Wegerif (2006) proposed the term 'co-constructive talk' in their research, which includes such strategies as "taking turns" and "coordinating and negotiating perspectives" (p. 92). These definitions, Rojas Drummond and colleagues claimed, could be more helpful when children are participating in open-ended tasks than Mercer's definition of exploratory talk which focussed on language markers such as 'I agree', which were more evident in specific tasks. Maine (2014) also uses the term 'co-construction' in a small-scale research project in which pairs of children were video recorded discussing picture stimuli. The children were recorded in Year 1 (age 5 and 6) and again in Year 6 (age 10 and 11). Maine found indications that in this open-ended task, certain children were in agreement with each other but used this to build on ideas and generate new ones. In this instance, what Mercer would call cumulative talk was not an impediment, highlighting that productive talk could look quite different depending on whether the task was a closed one (where the children are trying to find a correct answer together) or an open one (where children are discussing a stimulus).

There is also research into dialogue from the teacher's perspective. Roche (2011) is a practitioner-researcher who implemented a PwC programme with her class in Ireland in an action research study. She found that enabling children in her class to communicate more clearly and competently resulted in gains not only in the classroom but also in disputes resolved more readily outside the classroom. Roche is also clear that her previous practice was didactic and she did not present the sort

of opportunities within her teaching practice for children to engage in extended discussion, highlighting the role of the teacher in creating a community of inquiry. Wegerif (2010) also espouses this view when he writes “to teach creative thinking you have to do creative thinking” (p. 2). A consideration of the role of the teacher again is a key point, then: it will be difficult for children to engage in dialogue if they are not given opportunities to do so; yet for teachers who do not engage in dialogic practice, presenting the need to do so can be challenging.

The National Foundation for Educational Research (NFER) conducted a literature review into children’s thinking skills capabilities in the early years (Taggert, Ridley, Rudd and Benefield, 2005). Although this does not specifically relate to dialogue, it does relate to ‘thinking language’. The review concluded with a set of criteria that by the age of seven (and given the assistance of schooling), children are generally able to do:

> • use ‘thinking language’ involving words such as ‘think’, ‘know’, ‘guess’ and ‘remember’
>
> • construct informal rules for the purpose of solving problems
>
> • understand that the beliefs of others may be different from their own
>
> • understand that because someone has partial knowledge of something they will not necessarily have all of it (p. vi-vii)

However, while there are a number of indicators of good classroom dialogue given in this chapter, the irregularity with which these indicators occur in practice indicates that while there are “idealised norms” (Hofmann and Ruthven, 2018, p. 498) of dialogue and the challenge is in bringing those idealised norms in into actual practice (Michaels, O’Connor and Resnick, 2008). Hofmann and Ruthven further highlight the difficulty of “changing mathematics classroom practice in [the dialogic] direction” (p. 496). In this study, therefore, a point to consider is whether or not there is a change in classroom practice (from teachers and learners) or whether dialogue is being instrumentalised (Biesta, 2011) for the purposes of an intervention but does not have any wider or more lasting impact.

2.5. Critical thinking

This section considers critical thinking within a collaborative context. The ability to reason and to make discerning judgements about ideas which are posed has been identified as an important one in inquiry learning and also in educational dialogue, such as in exploratory talk and Dialogic Teaching and Learning criteria. However, critical thinking is not without its detractors; in a PwC context, it has been considered as narrowing or limiting the potential for the openness of children's discussion. Therefore this section also considers how, and why, critical thinking can be considered as integrating with dialogic elements.

2.5.1 Defining critical thinking

In a 1963 article, Ennis complained that fewer than two critical thinking studies were published per year. A current search for articles with the search term 'critical thinking' on the University of Cambridge's e-library gives over one hundred thousand returns for articles in current journals. While there will be degrees of focus on critical thinking in a number of disciplines amongst those articles, clearly critical thinking has achieved greater prominence than in Ennis' day. Facione (1990) attributes this to the momentum of critical thinking pedagogies in the 1980s. Yet attempts to find a coherent set of criteria of what critical thinking is have occupied researchers and practitioners for a considerable time.

Ennis identified ten areas of critical thinking, noting that a person may be good in one area and not in another: deduction, assumption-finding, definition explanation, reliability of evidence and authorities, generalization, hypothesis testing, evaluating theories, detecting ambiguities, detecting over-vague and over-specific claims (p. 18). the Delphi Report (Facione, 1990) was produced following the deliberation of forty-six panellists with a philosophy, education or social sciences background over the definition of critical thinking, and defined critical thinking in this statement:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or

> contextual considerations upon which that judgment is based. CT [critical thinking] is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society. (p. 2)

There are a considerable overlaps with Ennis', yet with the notable additions relating to the dispositions of critical thinking – for example, 'evaluating theories' becomes being 'fair-minded in evaluation'. In fact, the Delphi Report stresses the dispositional element of good critical thinking in a number of ways such as that people should be 'honest, prudent and persistent in inquiry' and that inquisitiveness should be 'habitual'. In addition, it is interesting that the ideal critical thinker is situated within a 'rational and democratic society', and the connection with pedagogy is explicitly made. With the description of critical thinking as a 'liberating force in education', the question that occurs is who is it that needs liberating, and from what? The phrase and its implications seem to highlight an ideal pedagogy of reason and reflexion as well as an ideal type of human being.

As with Ennis, Facione also notes that this is the ideal critical thinker but it is not necessarily the case that a person will or can possess all of the skills and dispositions listed here. Indeed, as one reads down through Facione's extensive list, it occurs that the fostering of these critical thinking attributes is a considerable task for pedagogy. It also occurs that in order to develop these dispositions, skills cannot be taught in isolation or ad hoc but should instead be part of a curriculum which fosters and builds on these skills throughout schooling.

2.5.2. Critical thinking in Philosophy with Children

Although Lipman's (1980) Philosophy for Children programme had a critical thinking focus, the move amongst (some) Philosophy with Children theorists is to consider PwC as a critical thinking programme as limiting and outdated (Vansieleghem and Kennedy, 2012); Weber (2012) also critiques Lipman's strand of PwC as reducing the richness of PwC to a critical thinking programme. This is despite Lipman's programme also taking into account categories of caring and collaborative thinking.

A general theme to emerge from these perspectives is that educational institutions act in a regulatory capacity to labels learners as 'good' – good students, good thinkers and so on by imposing a set of criteria which one should meet to achieve the status of 'good'. Conversely, those who fail to meet those criteria are labelled as 'bad'. According to these perspectives (Popkewitz, 2015), pedagogical practice aims to turn those labelled 'bad' into criteria-meeting 'good' learners, when what we should be asking is why those criteria: for those with a focus on power such as Foucault (in Jackson and Mazzei, 2012), the question is that of whose aims are served when pedagogy prizes certain attributes. With a posthuman focus, Murris (2015, 2016) writes that children are perceived in the education system as not 'fully human' because they do not yet have developed critical thinking faculties, for example. She refers to this as "age as a cause of epistemic injustice" (2015, p. 59), in which the education system as a whole positions children as deficient because we have one ideal of what it means to be human (i.e. the reasoning animal) which children have not yet achieved. This, she argues, is what Levinas meant with his claim that humanism is not sufficiently human (Todd, 2003) because it has too narrow a focus and fails to take into account all the facets of the human condition.

In the case of children, this is closely connected to their predisposition to play and to their status as relative newcomers into the world (Matthews, 1980). In the field of Philosophy with Children (which is Murris' own field), this issue has become paramount, with a number of current theorists and practitioners attempting to modify Lipman's 1970s perceived focus on critical thinking as the aim of PwC practice (Lipman, Sharp and Oscanyan, 1980). For Vansieleghem and Kennedy (2011), Weber (2012), Kohan (2012) and others, PwC has also become the philosophy of

childhood, citing (and lamenting) the analytic and pragmatist foundations of PwC as the source of its reduction to a critical thinking programme which has promoted a normative view of thinking which delegitimises other forms of thinking. The movement is towards appreciating what children can bring to philosophical discussion from their epistemic and ontological positions as children, who are knowers in their own way and in which play and affective thinking are key components.

However, other commentators stress the commonality between Philosophy with Children and critical thinking, referring to philosophy as a process, different from the acquisition of knowledge of the thoughts of previous philosophers. The very process of engaging in philosophical discussion is one which involves the process of learning to think critically. As Martens (2009) writes, "[p]hilosophy with children should be characterised by dialogue, concept analysis, argumentation and action" (p. 18). Daniel and Auriac also point out that the parallels between philosophy and critical thinking in terms of "questioning, conceptualizing, evaluating" (2011, p. 421), which are comparable to Costello's (2010) criteria of "develop, clarify, justify and apply thinking" (p. 2). Despite this emphasis on critical thinking, Martens remains circumspect about the reliance on critical thinking as it "enforces a discipline of alleged clarity of reason on children" (Martens, 2013, p. 161). They key, then, is to find a common path which takes into account both perspectives.

2.5.3. Debates in the critical thinking field

Hayes (2015) – his intent clear in his article entitled "Against Critical Thinking Pedagogy" – argues that critical thinking pedagogy is evinced in the classroom debate, with the effect that children "do battle" with each other to defend their position, and that this "critical attack" (p. 321) de-incentivises learners to share their opinions and not-quite-formed ideas. Instead, he advises that learners should (as should all of us) reach out with charity and to be prepared to conceive of another voice as ultimately sense-making. The problem with this is that he is conflating critical thinking as a whole with examples of pedagogy: critical thinking taught entirely through classroom debate would not be critical thinking because it does not

encompass all of the criteria for being a good critical thinker. As Ennis asserted, a learner good at the narrower range of critical thinking skills required for debate does not make a good critical thinker overall. Furthermore, that critical thinking involves an evaluation of other's ideas is a skill that is helpful for problem-solving activities, as Dawes, Mercer and Wegerif (2003) identified with cumulative talk in which children's attempt to form a cohesive social structure was an impediment to the task at hand.

Just as with those who evince that critical thinking is an integral part of PwC, as referred to in the previous section, a stress on the importance of critical thinking skills can be found across dialogic inquiry-based pedagogies While Linell (2003) stresses the importance of the situatedness and contextualisation of dialogue, he just as equally stresses that this relationism does not imply relativism. Just because dialogue is contextualised does not mean that there should be no way to differentiate between claims. Martens (2013) sees the issue as a postmodern one, claiming that the outright dismissal of Enlightenment values (such as the human being as a reasoning being) gives rise to a "pedagogy of relativism" (p. 164), which has no power to distinguish between justifiable and unjustifiable claims. Similarly, in writing on democratic education, Gomez Salazar (2016) highlights that not providing adequate means to judge between disparate groups of people with "antagonistic as well as incompatible" norms and values (p. 382) makes deliberative democracy hard to implement. As Daniel and Fiema (2017) point out, the ability to distinguish between claims is a key one in an age characterised by an overabundance of information and rapidity of change.

Gieve (1998) makes the distinction between monologic and dialogic critical thinking, regarding it as a "reflective social practice" (p. 124). This incorporates dialogue as a necessity in critical thinking for being able to fully attend to others' viewpoints in order that assumptions and fallacies in others' arguments may be properly understood and responded to. A key point in Gieve's distinction between monologic and dialogic critical thinking is that the former is associated with Western middle-class education (see also Atkinson, 1998), whereas dialogic critical thinking is a stance which allows people from across cultures to engage with each other. Lipman, too, draws attention to what critical thinking should not be: the "rugged individualism" (which he fears it has come to), with critical thinking being associated with the "self-sufficient cognitive macho type" (2003, p. 25). Again, this is a

conception of critical thinking within an education system for the purposes of defending one's own viewpoint, or monologic, imposed teaching in another form.

My conclusion is that critical thinking in any meaningful sense of the term is inherently dialogic critical thinking, or simply 'dialogic thinking'. Definitions of critical thinking itself – and of becoming adept at critical thinking – contain elements that cannot be developed in isolation but require a particular relation to others. This is related to dialogue in all senses of Wegerif's use of the term: activities pertaining to dialogue demonstrate shared thinking; a dialogic social ontology in which group members commit to hearing all voices within a group, and enter into I-Thou relationships. From a dialogic epistemological perspective, dialogic critical thinking can be seen as an epistemic discourse in which participants engage in discussion about the reasons they give, and the concepts and criteria they use (Sandoval and Morrison, 2003).

2.6. Argumentation and dialogue

Alongside critical thinking, argumentation is another aspect of reasoning that some have seen as problematic in relation to dialogue. Part of the reason for this is semantic: as with the 'critical' of critical thinking, the 'argument' in argumentation can be confusing. This is a commonly-held misconception as 'argument' and 'argumentation' are often used in place of each other with the distinction not always clearly understood (e.g. Andrews, 1997; Schommer-Aikins and Easter, 2009).

Initially, argumentation could be considered as Bohm's 'partaking in' dialogue, with people aiming to convince each other of the correctness of their own thoughts and so seeing each other as objects of persuasion or argument. However, Andrews (1995) stance on argumentation is a helpful one in the context of this study because he asserts that argument should not be perceived as a battle in which the goal is simply to win. This connects to the literature on critical thinking, in which critical thinking can be conceived of as individualistic and combative, but should be considered as a process of inquiry which includes considering one's dispositions toward others, which accords with Walton's (1989) conception of argumentation as a fundamentally social process.

It should also be highlighted that argumentation is not merely synonymous with critical thinking. Andrews (2007) defines the distinction between critical thinking, argumentation and argument as: “critical thinking is the desired dialectical substratum; argumentation is the process by which such thinking is manifested; and argument is the finished product (the essay, the dissertation)” (p. 3). Providing more detail about the process that constitutes argumentation, Andrews (2009) explains it as “a logical or quasi-logical sequence of ideas that is supported by evidence” (p. 3), and one that maintains a critical aspect to distinguish of from other sequences of ideas.

Finally, Andrews (2007) also refers to argumentation as “discussion with edge” (p. 13). This a key point because, as has already been noted, the assumption of Community of Inquiry discussions in PwC should not be a relativist one in which there is no means to distinguish between claims. The ‘edge’ provided by argumentation is one that could be important for providing a process for philosophising through the Community of Inquiry.

In considering how argumentation stands in relation to dialogism, the research of Anderson *et al* (2001) also asserts that the processes of reasoning in argumentation are “fundamentally dialogical” (p.2), with evidence of children utilising the behaviour and language of others in the group. Schwarz and Baker (2017) also claim that “argumentative practices can bear on dialectical and dialogical practices at the same time” (p. 103) – because one can respect a person whilst disputing his or her ideas.

This section now goes on to consider the theory of entwining argumentation approaches (also referred to as dialectic) and dialogic ones, and how this is done, before considering argumentation in classroom practice.

2.6.1. Theorising argumentation and dialogue

Schwarz and Baker (2017) highlight a concern that practices such as “dialectical argumentation” (p. 101) are not compatible with dialogic pedagogies – which is not a concern that they themselves share. The heart of the allegation of incompatibility reported by Schwartz and Baker is that of theoretical incompatibility, in which Vygotskyian ‘dialectics’ originate from a different philosophical heritage than do dialogic theories. They describe Wegerif as a “radical Bakhtinian” (p. 102) who

disagrees with Wertsch (1991) that dialectic (Vygotskian) and dialogic (Bakhtinian) ideas can be combined.

However, I do not think that this is Wegerif's position. Wegerif might reject a Vygotskyian constructivist notion that pedagogy implies becoming like the other (i.e. the learner becoming like the teacher) because without a gap between them (2011a) no true dialogue takes place. He does not, however, conceive of the multi-voicedness of dialogue as an implication of relativism: argumentation techniques such as critical discussion (Thompson, 2012) are still possible. But this does not mean that aspects of the dialectic and dialogic are combined, as Schwarz and Baker claim they are. Instead, dialogue is primary, and the dialectic comes from the dialogue.

In rejecting a constructivist theoretical background for this thesis, I also look to dialogic theories to explore how these allow for dialectical process to take place. In this I accept Schwarz and Baker's definition of the dialectic as "generally meant as an exchange between people to handle a disagreement" (p. 103). This is, again, where Buber's dialogic theory proves to be a helpful conceptual one. For Buber, a dialogic relationship means "swinging into the life of the other" (p. 81) and making the other present. Of course, swinging into the life of the other also means swinging out again, of "setting at a distance and entering into relation" (1965, p. 60), with dialogic moments taking place in the between. Both distance and relation are necessary: "difference and togetherness, distance and relatedness, are able to co-exist and connect" (Friedman 1976, p. 163). In Bohm's terms, it means maintaining an individual position while also being a part of the collective.

Brown (2017) allies the moments of coming together, or meeting, with the dialogic, and the moments of distance, or mis-meeting, with the dialectic. A solely dialectic meeting, Brown writes, may consist of the following (not necessarily actually verbalised) exchange: "'*Your reality is different to mine*' and the response may be, '*Your reality is different to mine and we cannot meet*'" (p. 426). In a dialogic exchange, however, when one swings into the life of the other, the exchange may be *'I notice you are different to me'*, responded to with *'I notice you are different to me, and that's OK'* (p. 426). From this dialogic basis, different points of view can be explored and negotiated using recognisable techniques such as justifying one's point

of view through claims and warrants. It should be noted, however, that *'I notice you are different to me, and that's OK'* is not shorthand for *'Everything you say is OK'* because there are truth-claims that are better proposed and evidenced.

It is also important to state that the ways in which truth claims will be addressed and justified can depend on the curriculum subject. In considering argumentation dialogue in the classroom, subject-specific considerations need to be taken into account because they have different epistemologies and, for example, a truth claim in science might look very different to one in religious education (RE). Pearce, Stones, Reiss and Mujtaba (2019) carried out research into perceptions of religion and science, noting that some participants in their study became capable of 'epistemic switching' to be able to talk about different disciplines using appropriate language. The following section examines this point in more detail.

2.6.2. Aspects of the argumentation process in the classroom

One reason that a consideration of argumentation is useful for this study is that argumentation is a process (Coffin and O'Halloran, 2009) and a consideration of that process could illuminate the strategy taken in the intervention for this study. An issue with teaching and learning strategies which are anchored in children's discussion is that there is a considerable cognitive demand placed on learners in discourse with others. Kuhn (2010) reports that even in dyadic encounters, the requirement to "simultaneously process the other's contribution and anticipate his or her own response to it and do so successively over what may become an extended sequence of turn-taking" (no page) can prove too great a cognitive burden. When inquiry learning takes place in whole-class sessions, then learners must take into account the contribution of up to 30 others, and construct their own responses from this. Given Kuhn's findings, this seems to be a considerable ask, especially where the child is young, and more so if they have not developed communicative competency in their early years.

This is even more the case where children are accustomed to talk which is highly reliant on the teachers (Hardman, 2020). Shifting the pattern of teacher-learner-teacher, or IRF, may therefore require structuring, to give children both the linguistic

ability and the discourse model to be able to do this. However, Kuhn does offer evidence that, with instruction, children are able to develop their arguments with others: “when explicitly instructed to do so, they are able to attend to the opponent’s argument and even generate counterarguments against it” (Kuhn & Udell, 2007). This research refers to sixth and seventh grade (age 11-13) students in the USA, and was carried out by developing students’ arguments over a course of activities, some of which were conducted online. For this study, consideration needs to be given to how to provide a model to younger children of how to develop the skills for the process of reasoning whilst also entering into dialogue.

Through this approach, the aim is to dispel the notion that an inquiry has no right or wrong answer, but instead focus on the ways in which the process of inquiry yields more successful or appropriate ways of providing answer to such questions. Costello (1996) has developed methodologies for conducting Philosophy with Children sessions with primary schools children, and clearly draws links between philosophy and argumentation. He suggests that both allow for the transcendence of subject-specific boundaries and to focus on reasoning processes. Having an argumentation schema, he argues, allows children “to reason and to argue as activities in themselves” (p. 50), which can then be applied to other specific subjects, including the discipline of philosophy. There is some disagreement here between Costello’s approach and that of Pearce, Stones, Reiss and Mujtaba, referred to in the previous section. The latter researchers refer to the language used in specific subject disciplines, and claim that students switch between epistemologies to successfully identify and justify truth claims in those subjects.

However, given that the children in this study are young, Costello’s model of learning to reason and argue as activities in themselves seems to be more appropriate. This would allow the focus of the study to be on the development of children’s dialogic thinking (including argumentation processes) rather than on a specific curriculum subject. The concern would be that the children’s ability to engage in inquiry would be hindered or bolstered by their subject knowledge. The application of these skills to a subject, including subject-specific language is therefore considered as a later step that children would take, beyond the focus of this study.

2.7. Summary of the introduction

The literature review has indicated a number of points to consider how dialogic thinking is characterised for the purposes of this study, and how best to approach fostering children's development of dialogic thinking. These can be summarised as the following points:

- Dialogue implies more than 'discussion'; true dialogue is relational, therefore developing dialogic thinking skills also requires developing the dispositions of dialogue, in order to develop a dialogic ontology that goes beyond mechanistic dialogue moves.
- The Community of Inquiry is a helpful pedagogic approach when considering the development of dialogic thinking. It is implementable in the majority of classrooms without the need for complex facilities or equipment. The central tenets of the Community of Inquiry are composed of the way in which knowledge is conceived (a pragmatist approach) and the role of dialogue in questioning ideas.
- Philosophy with Children is often concerned with the philosophy which is demonstrated in sessions. This is an approach which can exclude the majority of primary school teachers.
- Philosophy with Children can be better thought of as philosophising. This approach is more concerned with the ways in which children enter into dialogue when discussing ideas.
- The Philosophy with Children tradition does provide helpful subject material for questions to answer in dialogue. This is a particularly helpful approach to take in a study which focuses on developing dialogic thinking, because it is not focused on one particular curriculum subject. It also offers questions to which there is no immediate 'right' or 'wrong' answer, thereby removing the focus from 'getting it right' and on to the arguments which are made for a particular viewpoint.
- Dialogic thinking involves a tension between a commitment to hearing all voices in a dialogue, and developing a means by which to discern between ideas and arguments which are more relevant and better developed.

- Considering dialogic thinking as collaborative critical thinking is an approach which can provide a means by which children can discern the quality of arguments but also how that is done within a group dialogue rather than as a debating-type strategy in which there are winners and losers.
- Considering argumentation as a process, through which children can come to learn the process of argument could be a helpful approach. Argumentation is not necessarily antithetical to dialogue.

2.7.1. Producing concise design principles

The diagram which follows this section explains the ways in which the areas explored in the literature review intersect to provide design principles for beginning exploratory work to design an intervention to develop dialogic thinking in young children: dialogue, Philosophy with Children and critical thinking. There are elements of each of thee which overlap, but there are also elements of each of these three areas which are either beyond the scope of this study or have been rejected as not pertaining to the development of dialogic thinking.

The first of these is the individualistic element of critical thinking, which was detailed in depth in the literature review, more specifically the rejection of the *solely* individualistic elements of critical thinking: the interplay between the individual and communal aspects are more interesting, correspond to monologue and dialogue, and might be helpful for considering how reasoning develops in the school context. However, within dialogue, it is important to be able to differentiate between the quality of reasoning in different cases. As Maine and Hofmann (2016) state: valuing all of the voices in dialogue is important but the implication that this means that all reasoning is equally valid is “misleading for children” (p. 46). Critical thinking expressed in any form but the spoken is also not considered, as it is outside of the remit of its overlap with dialogue.

Philosophy with Children has, as was detailed in section 2.1, developed as three strands – two of which, the critical emancipatory and the philosophy of childhood – will not be considered in detail in this thesis. This is because the focus here is on PwC as a mode of inquiry, and this requires judgement-making and an integration of

PwC with reasoning skills which is not always apparent in these other strands. The later emergence of PwC theories with a postmodern gaze, such as Vansieleghem's claim that "from the 1980s onwards, P4C has been described as masculinist in its presumption of the norm" (2014, p. 1303), or Murris' (2016) post-humanist claims for PwC. Murris (2015) also seeks to change the language of PwC, preferring Philosophy *alongside* Children as a term which disrupts normative power relations between adults and children. The focus on power will not form one of the theoretical bases of the thesis.

Within the sphere of dialogue, I do not consider dialogue as a constructivist activity. Although this is common within the field of dialogue (e.g. Mercer, 1995), with some researchers claiming the Vygotskian idea that "dialogue is perceived as the intermediary between collective and individual thinking" (Vrikki, Wheatley, Howe, Hennessy and Mercer, 2019, p. 85), this thesis does not cover the psychological element within its scope. Indeed, from a philosophical viewpoint, there is some disagreement that the dialogic theories of those such as Bakhtin and Buber (section 2.3) can be said to have a constructivist foundation (Vygotsky, 1978, 1962). Matusov (2011) claimed that there are "irreconcilable differences" between Bakhtin and Vygotsky's approaches deriving from a philosophical foundation. While it is not possible to explore this fully here, Matusov's argument is a persuasive one because he makes the important point that in Vygotsky's work, development moves from the social to the individual: the individual takes the social into himself. Yet for Bakhtin, as for Buber, this is an impossibility because the way that one interacts with the other as a distinct 'other' is the basis for dialogue. This view is – to a degree – shared by Wegerif (2011b) who agrees that the Hegelian system, on which Vygotsky's work is based is not dialogic as it is a closed system. White (2014) also cites the "profound" (p. 221) influence of Hegel on Vygotsky, and joins Matusov in the claim that although a number of researchers have seen Bakhtin's ideas as an extension of Vygotsky's work, the two positions are opposed due to the irreconcilable philosophical basis of the work. In Buber's writings, he situates the I-Thou dialogic relationship as a direct one in which "no system of ideas, no foreknowledge…intervene between I and Thou" (Buber, 2004, p. 17)

For this reason this thesis considers dialogic theory as a philosophical theory, and extends Wegerif's conception of dialogue as a social ontology and an

epistemological framework throughout the thesis. While it is necessary to consider a Bakhtinian conception of dialogue, there are many elements of his work which pertain to the dialogic text, and his work is not expressly pedagogical (White, 2014). For these reasons, as well as the strengths within Buber's work itself, it is a Buberian concept of dialogue which will form the theoretical basis of this thesis. One of these strengths is the open acknowledgement in Buber's writing that interaction is an oscillation between I-It and I-Thou. The claim expressed at the end of the previous paragraph seems idealistic, if necessary, for the infinite possibilities of dialogic interaction, but Buber crucially does not expect that this will always be the case or even usually be the case. In a practical context such as that of the education sphere, presenting dialogue as something which can be desired but not always achieved seems like an eminently sensible one.

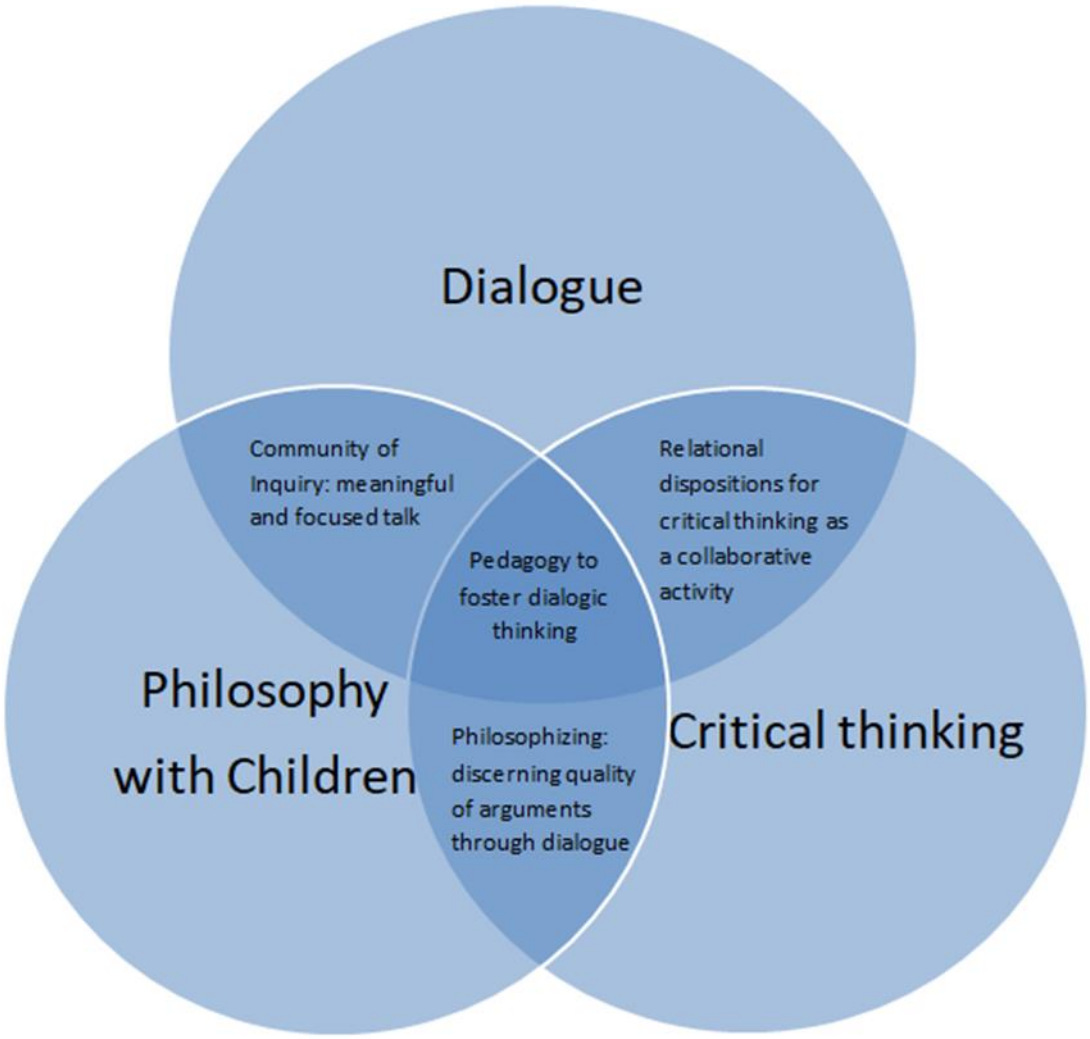


Figure 2.1. Design principles generated from literature review

2.7.2. Design framework 1

These design principles for a dialogic thinking intervention can also be itemised from the diagram into an initial design framework as:

- **The intervention should develop relational dispositions for critical thinking as a collaborative activity**
- **Develop the process of philosophising in order to discern the quality of arguments through dialogue**
- **The intervention should develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

These principles are referred to as high level principles (Bakker, 2018) because they have been informed by the theories of dialogic thinking which have resulted in them. However, while they give an indication of the theoretical basis of the intervention, DBR incorporates both theory and practice to produce artefacts which have informed by both (this is detailed more closely in the forthcoming methodology section). Initial guiding principles such as these should not be "detailed enough to determine every design decision" (Edelson, 2002, p.106). This means that the first stage of the research inquiry should be to investigate how additional design principles can be developed which employ these high-level principles in practical contexts and further inform the design. This may or may not result in a revision of the high-level principles accordingly, dependent on subsequent findings. Chapter 4 provides a discussion of the methods that were used to develop the design principles and before this, Chapter 3 describes DBR as a methodology in depth including the methodological decisions which were made for this study.

Chapter 3. Methodology

Introduction

In the introductory section, the essentials of design-based research (DBR) were set out as it was necessary to explain the structure of this thesis. In this section I provide the groundwork for conducting a DBR project, including a consideration of what DBR should and should not be according to previous work. This section also considers the criteria for DBR and how this project meets those as well as the theoretical implications of conducting research into dialogue as *dialogic research* as a DBR project. As McCandliss Kalchman and Bryant (2003) highlight, DBR is a collaborative dialogue of methods and therefore this section offers a consideration of the ways in which DBR can be approached as dialogic research.

Unfortunately for a section entitled 'Methodology', Bakker (2018) claims that "design research is neither methodology nor method" (p. 7), basing this assertion on interviews with design research experts, all of whom were in agreement on this point. Exactly what to call design research remains a point of obscurity: Bakker suggests that is could be called an "approach", or a "strategy", but perhaps is best thought of as a methodological framework (p. 7). This is because DBR uses the established research methodologies of other forms of research but does so flexibly, employing different methodologies in different stages of the research project in order to develop (design and research) an intervention within a practical context. It is for this reason, as was explained in the introductory section, that methodologies and methods relating to each phase of the project have been explained within the reporting of that phase. My aim in this is that the reasons for using a particular methodology or method will be clearer when set in the context of the iteration rather than presented together here.

3.1. DBR as dialogic research

There is a difference between researching dialogue and researching dialogically. In fact, there is an innate tension between the two, according to both Buber and Bakhtin's conception of the dialogic relationship as one which is mutable and

boundless. Many of the examples of research into dialogue given in the literature review codify examples of dialogue into categories, which ceases to be a dialogic *Thou* relationship. As Buber (1923/2013) writes "I can take out from him the colour of his hair, or of his speech, or of his goodness. I must continually do this. But each time I do it he ceases to be *Thou*" (p.7). Researchers such as Michaels, O'Connor and Resnick (2008) also highlight this issue within the context of classroom talk, giving the example of a boy who is, in technical terms, highly competent at discursive practice: "questioning premises, making claims, bringing counter-examples" (p. 294). However, what is also clear from the boy's speech is that the contributions made by the group do not matter. The authors go on to state that this is "pervasive" (p. 294) in the examples at which they have looked. Therefore the boy might appear to be engaging in dialogue when his contributions were coded, but he is not engaging in group work dialogically. Coding dialogue can therefore not only miss whether or not the encounter is dialogic or not, but also the act of coding can render the encounter undialogic.

However, if one claims that research into dialogue, by the very act of researching, ceases to be a phenomenon, research therefore becomes an impossible act. To attempt to avoid this impasse, it is helpful to return here to Wegerif's (2007) conception of dialogue as

- Pertaining to the activity of dialogue
- Texts which are not monologic
- As epistemological paradigm
- As social ontology

If one only considers the first category in designing research then any 'activity pertaining to dialogue' may or may not, in fact, be dialogic in the way which Buber would conceptualise it. Buber (1947/2002) provides a helpful distinction in the positions that one may take when perceiving others:

> The observer is wholly intent on fixing the observed man in his mind, on "noting" him. He probes him and writes him up. That is, he is diligent to write up as many "traits" as possible

> The onlooker is not at all intent. He takes up the position which lets him see the object freely, and undisturbed awaits what will be presented to him. Only at the beginning may he be ruled by purpose, everything beyond that is involuntary (p.10)

The first of these descriptions indicates an I-It relationship, and the second an I-Thou. While there are some research approaches and methods that lend themselves more naturally to the second, for example: grounded theory, ethnography and unstructured interviews (Cohen, Manion and Morrison, 2007), when a researcher is engaged in working with education practitioners to implement an intervention, when they want to know if it is practicable, how it works, and so on, then it might be that an element of codification and reification is necessary, if only to 'pin down' something for further research and iterative development. Frank (2005) refers to the commitment to the "unfinalized person" (p. 966) as a key one in dialogic research, because to conceive of another being as one which is completely within our sphere of understanding, to have the "last word" (p. 966) on who they are, is to take them out of dialogue and an I-Thou relationship: we consider them as object.

This presents a great demand for research. It is a familiar theme within interpretivist research traditions which have gone so far as to suggest that no data from research can ever truly give any information that can be extrapolated beyond a particular individual context (see Chapter 6 for a detailed discussion regarding this point in the context of the research interview). At the same time, the argument could be made that, given that a good deal of research has been carried out into what productive classroom dialogue looks like (section 2.4), making observations whilst being aware of specific aspects of dialogue seems like a reasonable course of action.

I contend that, in conducting research, one must be both observer and onlooker. Referring back to Buber's awareness that in 'taking out' a characteristic from someone the Thou relation ceases – but nevertheless one 'must continuously do this', provides a conception of how research can focus on specific characteristics of an intervention – such as coding dialogue while also considering whether true dialogue is actually taking place, for example by analysing dialogue by taking a more holistic approach. This approach also accords with Hammersley's (2008) call to

“methodological caution” (p. 94), when considering research quality and making claims from research data. While he accepts that, for example, interview data must be treated with the proper cautiousness, ultimately “to rule out the idea that individual people can have distinctive experiences to which they have potentially superior access, and which they can convey to others, ends in absurdity” (p. 95)

This does not imply that one can perform both roles as the same time – as an ‘observing onlooker’ or an ‘onlooking observer’, but rather one oscillates between the two positions, at different times in the research project being or the other and moving between positions. It is for this reason that I chose to put myself in the position of researcher-practitioner for the second iteration (Chapter 5), giving the teacher the opportunity to observe me, and also giving me the opportunity to experience being observed whilst teaching a new intervention.

At the same time I, as researcher, could not always decide what was the most dialogic option, because that should take the form of a dialogue between all parties. An example of this is during the second iteration when, considering that a semi-structured interview with a teacher would be more dialogic – in that we could explore meanings in greater depth – than would a questionnaire. However, in actual practice, finding time for this was extremely difficult in the teacher’s working day. Finding a location for the interview was also difficult and the only location that was available was the reception area of the school during the lunch break. This proved extremely noisy with a number of children interrupting the interview to talk to the teacher. She also had no time to eat lunch (the interview time was her suggestion), and so I felt as if I were imposing. However, the interview was supplemented with other conversations that took place while I was visiting the school to film. In this respect, keeping a reflective journal as a researcher was an invaluable means of recording these informal conversations, which could be combined with the questionnaire to provide a fuller picture of the teachers’ perspectives.

3.2. Pragmatist Foundations of DBR

The philosophical underpinnings of educational research are concerned with the nature of reality (Biesta and Burbules, 2003) – if there is one reality then the purpose

of research is essentially to uncover that, whereas if what is real is a plurality constructed by a multitude of human interactions then the purpose of research becomes to understand how and why those constructions occur. The division between these philosophical positions gives rise to positivist and interpretivist research traditions, and is also why these traditions have been (at times) seen to be mutually exclusive if one is to maintain philosophical coherence – dichotomies, which were particularly pertinent during the 'paradigm wars' of the 1960s and 1970s (Lincoln and Denzin, 2000). However, the pragmatic approach to educational research offers an alternative to these strict divisions, because it is not "committed to any one system of philosophy and reality" (Creswell, 2003, p. 12). This section examines pragmatist approaches to knowledge claims and the nature of reality, approaches which are "suspicious of certainty" (Bacon, 2012, p. 3). What is important is that the inquiry serves a particular purpose: the research question. The research question is key because it highlights the deficiencies in a situation and possibilities for transitions to occur which seek to remedy those deficiencies. (Hildebrand, 2013)

One consequence of this is the central role of the human in pragmatism. James used the phrase "the trail of the human serpent is thus over everything" (in Hildebrand, 2013, p. 58) to illustrate the focus on the human in pragmatic stances. Indeed, Hildebrand states that "pragmatism must be a humanism" (p. 57) because, he claims, pragmatism considers experience from a human perspective without efforts to be transcendental. Therefore for Dewey, the tension between realist and idealist perspectives can be countered by turning scientific 'facts' to the service of human activity, when "science provides the means to realize…more efficiently, more securely the things we value" (Pring, 2000, p. 36-37). Biesta and Burbules (2003) connect this to underlying philosophical assumptions when they write of pragmatism as a realist position, but not realism as completely separate from human activities: "we will always have to account for our own presence" (p. 32) in the universe when we report on reality.

While there are a number of pragmatist positions, with some sharp demarcations between specifics (Bacon, 2012), a central tenet of pragmatist epistemology is, as was detailed in section 2.2 on the Community of Inquiry, a denial of the Cartesian duality of knowing for certain or relinquishing all claims to knowledge, where doubt is

perceived as “simply a necessary fact of being in the world” (Ellerton, 2016, p. 112), and the transition from doubt to belief (which constitutes a real but temporary reality) is arrived at through the process of inquiry.

The nature of pragmatic epistemology makes it particularly suitable for a DBR project. As Gravemeijer and Cobb (2006) point out, the comparative lack of literature providing guidance on design-research principles results in researchers turning to other sources. They term this “theory-guided bricolage” (p. 22) to refer to the drawing together and adaptation of existing materials with an awareness of current and developing theory. For Kelly (2006) this is an attempt to “forge a methodology” (p. 166) between randomised control trials and qualitative approaches. Attempting to construct a research methodology that sits between existing paradigms correlates with pragmatism as a position which aims to consider knowledge in a different relation to either absolute or relative claims. Ultimately, a pragmatic research paradigm is one which attempts to understand ‘what works’ in a situated context with the research tools which one has available (Creswell, 2003). This makes it adept for DBR research.

Given the challenges faced in conducting DBR as outlined by Gravemeijer and Cobb above, pragmatist sources also offer a consideration of the way in which inquiry (research) is conducted. Misak (2000) particularly objected to Peirce’s view that at the end of inquiry, an agreed upon belief constituted what was true. The two objections to arise from this were, firstly, that there *could* be an end to an inquiry, and secondly, that the methods employed in arriving at a consensus must come under scrutiny.

To take the second of these objections, there are obviously some means of arriving at consensus which would not result in beliefs-which-may-be-considered-true. An example of this is through coercion by a totalitarian regime (Bacon, 2012), which of course could not be considered to have been arrived at through genuine consensus. However, Misak (2007) also draws attention to the nature of inquiry which takes place by considering the reasons *why* it is taking place. Instead of regarding only meaningful truths as the product – and inquiry the process – of scientific forms of inquiry (e.g. hypothesis testing), we should consider truth in the context of “particular local aims of inquiry” (p. 70). The sorts of inquiry differ,

therefore depending upon the kinds of things that we want to find out – she gives examples of “getting a reliable guide to action” or “greater understanding of others” (p. 70), which may require other forms of inquiry.

Considering the form of inquiry which is appropriate for research in the context of a school environment in which there are multiple stakeholders is vital. Exploring and understanding the factors affecting an intervention in a school setting is not straight-forward because there are at least four different sets of interests to consider. Firstly, the researcher has research requirements such as access to participants, data-collection and ethical considerations to consider. Secondly, teachers have their own set of interests connected to their professional practice, such as what they think is best for the children in their class and their preferred methods of practice. The third set of interests is that of the school as a whole, which could be connected to national testing scores or inspection reports, and has a basis in education policy. Finally, there are the interests of the children to consider: what should their learning look like? What do they learn or should they learn, and why, and how?

It is clear that tensions may well arise between the interests of these four groups (grouping which is understood to be reductive). For example, what teachers consider to be best practice might be at odds with a school’s interest to score more highly in national testing. The presence of a researcher might be considered to be disruptive to the children’s learning. Therefore these interests are sometimes competing. This means that asking if an intervention ‘works’ when it is trialled in a school setting is a difficult question to answer. Does it ‘work’ if children’s test scores go up? If children engage with and enjoy it? If it accords with a teacher’s preferred type of practice? If it challenges teachers’ practice? If a head teacher thinks it will give the school more credibility with inspection officers?

For these reasons DBR has the capacity for flexibility in understanding interventions trialled in the context of a real-world setting (Anderson and Shattuck, 2012), less asking ‘if’ it works than ‘how’ it might be understood to work in all the complexity of an educational setting. DBR’s commitment to a mixed methods approach (see sections 3.3 and 3.4) provides the ability to attend to different purposes of inquiry by employing different forms of inquiry in different iterations. In this research project, as has already been noted in previous sections, each iteration

developed the intervention but did so with a particular focus: the first iteration on developing the intervention, the second to understanding how children related the images of the intervention to particular skills and dispositions of dialogic thinking, and to teachers' abilities to teach it independently; and, once these two aspects had been established, to an evaluation of the ways in which the intervention developed children's dialogic thinking. According to Misak, truth is "nothing over or above the fulfilment of those [local] ends" (2007, p. 70)

However, Misak's first objection – that inquiry ever has an end-point – is also a pertinent one for a DBR project, particularly one which is exploring the dialogic possibilities of DBR. Dialogue itself is characterised by its infiniteness: Holquist states that in dialogue "there is neither a first word nor a last" (1990, p. 39), resulting in a system which is never closed down (Wegerif, 2017). DBR as a methodology is also not one which can be said to be complete even after a number of iterations. Barab and Squire (2004) refer to the eventual "solidity" (p. 4) of a researched design, but not to a finished design, and this is partly because contexts change (which can be seen as an evolution of a larger dialogue) and a particular iteration of an intervention may therefore also need to change.

3.3. Characteristics of DBR

Design Based Research is relatively new and as such a great deal of the literature pertaining to it asks questions about exactly how a researcher is to conduct coherent, quality research (Kelly 2004). There are a number of issues not only with clarifying methods, but also with establishing DBR as a research methodology.

Design research is a complex undertaking because the aim is, as Brown (1992) initially wrote, to discover not just if a learning process has worked or not worked, but to discover how and why this is the case. Kelly, Baek and Lesh (2008) write that DBR is not for "promoting and developing educational innovations" (p. 6) because this end in isolation gives no affordance to the reasons why a particular design is being undertaken – or the answer to the 'why' question would produce a context-specific closed loop, in which the intervention would be deemed successful once it has fulfilled criteria within the loop (Middleton *et al* 2008). Instead, not only is one

aim of the design to work across contexts, but there is also an overt consideration of the ways in which the theoretical basis of the intervention is considered throughout the iterative process as are, by extension, broader theories of learning and education.

This section provides a set of criteria for DBR taken from Anderson and Shattuck (2012). Despite the flexibility of the approach and the queries over whether or not is can be termed a methodology, there are a number of generally agreed upon criteria for conducting DBR. While these criteria were taken from a specific research paper, they accord with others' criteria for design research (e.g. Cobb, Confrey, diSessa, Lehrer and Schauble, 2003). From each criterion follows a statement of how this project intended to fulfil it. In further sections, there will be a subsequent discussion of each of these points in greater detail from a methodological and methodical perspective.

Criteria for Design-Based Research and how these were envisaged for this project at the initial stage:

1. Situated in a real educational context

Research is carried out with Key Stage 1 primary school classes. Each iteration draws on data from teachers and learners to provide results which will be extrapolated into additional school contexts and use to scale the intervention as one which can be taught independently by teachers.

2. Focussing on the design and testing of a significant intervention

The Playground of Ideas intervention started from an identified need in a local context and a review of literature from educational and philosophical perspectives. In the first iteration, the school's head teacher identified a desire to include PwC sessions, but a lack of knowledge of expertise or suitable materials to implement this.

2a) Intervention is informed by literature and theory from other contexts

The study includes a range of literature relating to a number of approaches to and perspectives of classroom dialogue. These include philosophical approaches to

dialogue from Buber; theoretical and practical approaches to Philosophy with Children programmes; critical thinking traditions; argumentation; and classroom dialogue in practical studies.

3. Use of mixed methods

The study utilized a number of research methods for two main reasons: firstly, different iterations of the intervention required different forms of information gathering. Secondly, dialogic thinking is a complex interplay of a number of factors, and to focus on only one element, such as coding dialogue, would be reductive.

The research methods which were employed during the iterations are:

i. Iteration 1: Classroom observations, document review, discussions with practitioners.
ii. Iteration 2a: Learner questionnaire with follow-up group interview to ascertain understanding of concepts introduced in the intervention, and to inform further iterations of the intervention.
iii. Iteration 2a: Teacher interview to understand the intervention in practice and scalability to inform further iterations.
iv. Iteration 2b: Learner questionnaire to ascertain if the learner participants conceptualise the intervention in a comparable way when the iteration is taught by teachers independently.
v. Iteration 2b: Teacher questionnaires to gain their perspective of the experience of teaching the intervention and its impact on learners.
vi. Iteration 3: Pre- and post-test of non-verbal reasoning items. This was designed to measure individual and group ability; tests were taken individually and in groups of three (devised from the group measures test developed by Wegerif, Fujita *et al*, 2017).
vii. Iteration 3: Video recording and multimodal analysis of dialogue during group tests.
viii. Researcher reflective journal (all iterations): to add information that may have occurred throughout the experience of authentic classroom practice which was not captured by other research methods but nevertheless informed the way in which that data was interpreted, design principles or further iterations.

Information about these research methods has been provided very briefly here, and each will be expanded upon in the relevant section relating to a particular iteration.

4. Involvement of multiple interations: “continuous evolution of design as it is tested in authentic practice” (p. 19)

The development phase (iteration 1) of the intervention is carried out following reference to multiple sources and was reformulated following its implementation in practice (delivered by the researcher, iteration 2a), group interviews with the children and consultation with the class teacher. There are two further phases reported on in this study, both delivered by class teachers, following each of which the intervention was revised each time and new design principles developed.

4a) Involvement of a collaborative partnership between researchers and practitioners

Schools are involved at all stages of the research process. In the development phase the researcher takes the role of class teacher to deliver sessions with the class teacher taking the role of observer to collaboratively comment on the intervention design. The group interview took the form of the community of inquiry, which stresses the plurality of voices in the group.

5. Evolution of design principles

Throughout the iterations, the design principles of an intervention to develop dialogic thinking are proposed, trialled, refined and added to in light of new findings. The design principles refer to the intervention in classroom practice and also to refining a definition of dialogic thinking. Each iteration clearly indicates how the design principles have been refined and added to accordingly.

6. Comparative to action research

Many elements of action research are in-line with the iterative, collaborative nature of DBR. There is also a connection to the pragmatic paradigm which underpins action research. The sessions in iteration 2a, in particular, were taught by me as a researcher-practitioner, with the teacher acting as observer.

7. Practical impact on practice

Each iteration has a clear plan for the dissemination of the work into the wider school culture. For example, in the pilot work, staff meetings disseminated the progress of the project to the entire school staff, and to the school governors, and had collaborative input from researcher and teachers. Research data gathered from teachers asks about impact on wider teaching and learning in the local context. The final iteration includes strategies for teaching and assessing dialogic pedagogies in a practical context.

3.4. Mixed methods research

A key characteristic of DBR lies in Kelly's point that "design remains a transitive verb" (2004, p. 116): a component of a DBR research project is that the design is of something specific, which is then researched. An intervention can take a number of forms, commonly listed as technological intervention, curriculum design or teaching process (Van der Akker, 2006). While this characteristic differentiates DBR from mixed methods research design, because DBR always has a specific design output, the very fact that mixed methods is specified as a criterion of DBR requires an examination of the methodology of mixed methods.

Mixed methods research has a provenance of about twenty years, but has a wide applicability (Creswell, 2011). In a situated design-research project, a variety of methods are the best way of capturing the complicated world of the classroom. A quantitative element is therefore especially important considering the reliance on data and assessment of primary schools, and that a school must answer to policy makes and assessment frameworks. Nevertheless, Ball (2003) writes that this focus is too extreme, resulting in the loss – for teachers – on any valued focus of facets of practice outside of this. Therefore it is important that teachers' views and realities are taken into account in this study in a meaningful way. This makes a qualitative approach integral to the study.

Ventakesh *et al* (in Caruth, 2013, p. 113) set out seven purposes of mixed methods research which focus on the ways in which a variety of methods may be

integrated in order to ensure true mixed – rather than multiple – methods. Two of these purposes are ‘complementarity’ and ‘completeness’, both of which have relevance to this project, as both of these terms refer to the use of a range of methods to ensure a more complete range of viewpoints and representation of experiences is gained during the research project. Caruth (2013) refers to this as a convergent parallel design (p. 114) – one in which data is collected concurrently and merged to answer research questions.

A challenge with conducting mixed methods research of any sort, including within the context of DBR is that it can be extremely time consuming, requiring an adherence to the protocols of a number of research methods, in addition to an expertise in the ways in which these methods are combined to form mixed (as opposed to multiple) methods (Creswell 2003). Kelly (2006) writes that the broad application of DBR, and the use of domain-specific structure to inform a theoretical basis for the research makes a single set of quality criteria “not plausible or even desirable” (p. 108). This is an additional challenge as considerations of quality must be addressed on a case-by-case basis in each iteration. It is for this reason that there is a separate methods section in each iteration, presenting quality control information as it is required.

3.5. Research Questions in a DBR study

In his 2018 book on design research in an education context, Bakker devotes an entire chapter to the issue of the research question in DBR. The architecture of questions is given some considerable attention, and Bakker emphasises that “what- and how-questions” (p. 80) are the sorts of questions which engender the open nature of DBR, an emphasis shared by others such as Anderson and Shuttock (2012) who claim that asking how something works rather than if it works is more within the remit of DBR. Despite this, Bakker cautions that several experienced DBR researchers whom he interviewed expressed the view that this was only possible after a good deal of research on the topic. This is why the main research question is presented here, following the research carried out in the literature review as well as a review of the DBR approach.

In earlier work, Bakker (2014) also highlights a tension for the DBR researcher in the formulation of research questions, that they should be “anchored” (p. 1) in the research literature, but also that they are informed by the iterations. While Bakker states that this poses a challenge for design-based researchers, further cautioning about the use of research questions in design research being asked wholly of the design, or characteristics of the design, he does concede that this is a condition that applies only to the main question. It is an obvious point for the design researcher that in the initial phases of research that questions will be asked which determine key points related to the design of the intervention before asking broader questions about teaching and learning or theory. This is allowable, according to Bakker (2018), as well as being necessary, for researchers need to know certain things about their proposed intervention before they can find out other things. The important point, in order to ensure that the research is not fragmented, is to relate the findings from each iteration to the main research question. Therefore the main research question which is given in the following section has been revisited in each iteration, and the discussion section of each iteration explicitly relates the findings from that iteration to the main research question, integrating those findings with others to further an answer to the question and refine the design principles.

As a note, Bakker does stress that many of these considerations form part of the background work of a study, rather than needing to be explicitly stated. However, Bronkhorst and de Kleijn (2016) also advise that, in their study of PhD candidates conducting DBR the fidelity to the approach can cause “doubt and insecurity” (p. 85). Given that Bakker also regards DBR as “among the most challenging research approaches [for doctoral students]” (2018, p. xv), I considered it best to provide a more open account of the decisions taken, including the structural decisions taken for producing the thesis.

3.5.1. Main research question for this study

This question was developed following the guidance above, and as an overarching research question which all of the sub-questions sought to answer. The research

question is anchored in the contextual educational problem, research literature and the requirements of DBR, as was indicated in the design framework:

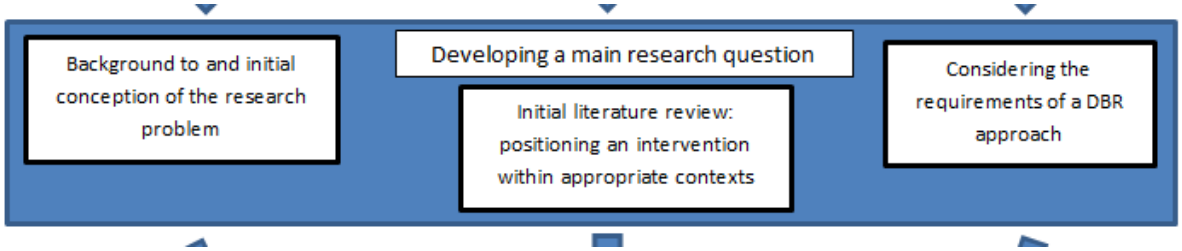


Figure 3.1. Framing a research question in the design framework

The overarching research question to be answered in the study is:

How can a teaching-and-learning intervention support primary age children of six- and seven-years old in England to begin to demonstrate dialogic thinking in whole-class and small group contexts?

The following sections describe the iterations which took place to answer this question.

Chapter 4. Iteration 1: Development Phase - Exploratory Study

The aim of the exploratory study is to further refine Design Framework 1 to inform which sort of intervention should be – and could be – proposed in the first instance in order to support target-age children's dialogic thinking. My formulation of the problem was initially proposed following my background experience as a philosophy and primary school teacher. At that stage I had reason (as set out in the Introduction section) to think that: group discussion for learning was valuable (and it was presented as such in initial teacher training); children did not automatically work in groups in a way which was productive; and that speaking, listening, and communication are connected to thinking. Three high-level design principles were identified as a basis for devising an intervention to develop children's dialogic thinking skills, drawn from the intersections of Philosophy with Children, dialogue, critical thinking and argumentation (Figure 2.1), and these formed Design Framework 1. These principles were that an intervention should:

- **Develop relational dispositions for critical thinking as a collaborative activity**
- **Develop the process of philosophising in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

These high-level principles which formed the theoretical basis of the intervention required embodying in an intervention designed for practice, and this embodiment required further design principles, as the strands of the Design Framework indicate (Figure 1.1). The literature review and background sections indicated that explicit skills need to be taught for effective discussion during group tasks, and that these skills should be taught to children in the younger years of primary school in order that effective group work might take place from the time of those earlier years. This, in conjunction with the high-level design principles formed a starting point for the exploratory study.

In a DBR study, the issue under investigation should initially be formulated and explored with practitioners to come to a greater understanding of the problem and the ways of finding effective solutions, as “selection and creation of the intervention is a collaborative task of both researchers and practitioners” (Anderson and Shuttock, 2012, p. 16). This, as indicated in the Methodology section, is a fundamental aspect of design-based research practice. However, in viewing DBR through a dialogic lens, I want to suggest that for education researchers with a background in teaching, it may be that the collaborative task of understanding the problem is one which can begin as an internal dialogue in which an individual views practice through a researcher lens and vice versa. This accords with Bohm’s (2004) view of dialogue, in which a dialogue may be carried out within an individual where the dialogue is between different aspects of oneself and one’s experiences.

Of course, there are obvious issues with this as a means by which to formulate a research problem. The first is that in very early work on DBR, Brown (1992) identified that researcher bias can be a very real issue in design research. A further problem is that the researcher may be focussed on one particular problem in order that a “solution is revealed to be a project of interest or ‘pet’ project, rather than a genuine attempt to solve an educational problem” (Herrington, McKenney, Reeves, Oliver, 2007, p. 4091). Therefore it is clear that the researcher alone cannot formulate a problem, as no one person in isolation could formulate a problem within so complex a field as education. However, taking a dialogic approach to DBR allows a researcher-self to be in dialogue with a practitioner-self and the resulting awareness of a problem or issue that arises from that dialogue can be a useful starting point for DBR.

The next step for the development of this project was to take my own thoughts into dialogue with those of practitioners in the field of primary education, specifically those practicing with younger children. I therefore consulted with four teachers and one head teacher and made observations in five Year 2 classrooms to investigate these questions.

Following the literature review, which indicated the type of approaches to take to formulate an intervention to develop dialogic thinking skills and dispositions, and my

own background self-dialogue, I had two research sub-questions to answer in the exploratory iteration:

1. **What elements of dialogic thinking are important for children in the target age group to develop?**
2. **What are the barriers to the development of these skills and dispositions in current teaching and learning practice?**

This section draws upon a number of approaches to answer these questions, including a review of additional literature which builds upon and focuses that of the literature review. This literature examines further practical aspects of PwC, as well as the practical techniques of argumentation.

4.1. Exploratory discussions with practitioners

4.1.1. Sampling

There were four teachers with whom I held exploratory discussions, all of whom teach or have taught in primary schools in England. Contact was made through established personal connections. The table below indicates the characteristics of the teachers who participated in these exploratory discussions.

Table 4.1. Details of participating teachers

Teacher	Background Information
Teacher 1	Former teacher of Year 2 children with five years classroom experience. Now a PhD student conducting research into writing and assessment
Teacher 2	A new teacher of Year 1 children who had recently completed her first year of teaching in a large urban primary school
Teacher 3	A teacher currently teaching a mixed Year 1 and 2 class at a large urban primary school with eight years of teaching experience
Teacher 4	A teacher currently teaching a Year 4 class in a small village primary school, with two years of teaching experience

4.1.2. Aim of the exploratory discussion

The purpose of these discussions was to gain a greater understanding of practitioner approaches toward the characteristics of successful classroom dialogue and how they had experienced the teaching and learning relating to dialogue as practitioners. I also wanted to find out what they already did in terms of facilitating classroom dialogue.

4.1.3. Methods

The discussions were held as unstructured interviews because although I started from the purpose of wanting to understand more about the practitioner perspective of classroom dialogue, I did not want to impose any more of my own pre-conceptions. To use Buber's terminology, in the case, I wanted to be an onlooker rather than an observer. I did not know enough at this stage about other teachers' experiences of classroom dialogue to know which questions to best ask, therefore it made sense to not ask any questions but to be guided through their experiences

I carried out all of the interviews in an informal setting. It should be noted, however, that describing these exploratory discussions as unstructured interviews is largely to situate them within an established research context. In practice – and this is especially the case because the sampling procedure was to hold discussions with pre-established contacts – the conversations were a kind of ethnographic encounter in which we met in social locations and I explained more about the context and background of my research. Following this, I let the teachers talk about their experiences with dialogue in the classroom in a teaching and learning context. I did not make notes, nor did I record the conversations while they were taking place. Instead, I stayed on after the participant had left and made field notes on the conversation which had just taken place. I typed up these notes, which can be seen in Appendix 1.

The unstructured interview is "the ultimate in giving the respondent the freedom to be meaning makers" (Warren, 2001, p. 83). This was one of the reasons why I felt it was important for the interviews to take place outside of a school setting, something

which was possible due to the way which the sample was constituted. Ball (2003) was concerned about teacher performativity necessitated by discourses of teaching practice which have emphasised teacher accountability in an ever-shifting policy landscape. As a result of this, he claims, teachers' professionalism has been diminished. Of course this is a generalisation, but providing an interview space outside of the professional environment might be of benefit for the teachers to be able to "step back" (Cain and Harris, 2013, p. 343).

Kvale's (2007) view that "a qualitative interview seeks to cover both a factual and a meaning level" (p. 11),' is a useful one here because it helps to illuminate a potential gap between theory and practice. The theory, derived from previous research and from dialogic theorists, indicates that dialogue and collaborative thinking is positive for learning: it might not be possible to call this a fact, but it would be reasonable to suggest it as a 'working fact'. However, whether or not this is actualised in education practice, and more specifically the reasons for that, could be ascribed to the 'meaning level', requiring a fuller understanding of the teachers perspectives to gain "an understanding of the world from the subject's point of view" (Kvale, 1996, p. 1). This might be a different world from the one in which research into dialogue is conducted.

Iteration 2 also employs interviewing in a semi-structured way, and so there is a fuller discussion of the affordances and limitations of interviewing as a research method in section 6.3.1.

4.1.4. Ethical considerations

This sub-section considers ethical matters in carrying out this fieldwork. Although it was covered formally by the ethics form that was approved by the education institutions, there are broader considerations of ethics to deliberate on, particularly when a researcher is asking a practitioner to discuss aspects of their practice and that of their employer.

This is why I paid particular attention to the interview situation. These conversations were all carried out with pre-established contacts in the teaching world. They were carried out informally, but it was still important to provide those who took part with information about why they were taking part and what they could

expect me to do with their information. This is particularly the case as I knew all of the practitioners with whom I had conversations in a context outside of the research study, and so they might be inclined to be less guarded with me than with a researcher that they did not know personally or professionally.

This matters because I was asking them about their own approaches to dialogue in their classrooms. These were not just matters of personal opinion, but we were discussing elements of the ways in which they conducted their professional practice and how policies and practice were enacted in their wider school setting.

It was for this reason that I conducted all of the discussions outside of the school setting. I did not want my participants to feel constrained by their professional setting, but to be able to talk more freely where they were not going to be overheard or interrupted by other colleagues. I also informed all of them that they identity would be kept anonymous, and that they could decide later that they did not want their information to be used.

To maintain this sense of discussion rather than research interview, I did not take notes while we were speaking, nor did I record. This was to enculture a situation in which there was less of a 'gap' between researcher and participant. This is because dialogue (such as is being researched in this study) is also a consideration of research ethics. This includes issues of power biases and objectifying relationships: what Buber refers to as 'observer' who merely wants to note characteristics of a subject, compared to an 'onlooker' who wants to understand the full experience of those with whom they are researching. There is a full consideration of this in section 3.1, and with regard to conducting interviews with teachers in particular in sections 6.3.1 and 6.3.2.

4.1.5. Findings from the exploratory discussions

There were some commonalities in the teacher's perspectives, and some issues which were raised by individual teachers, but which concur with information from other sources.

The demands of the role

This was an issue which was identified by all of the teachers surveyed. Teacher 2 expressed this most starkly when she said “It’ll be all I can do to get them through the phonics check”. She had what she termed a ‘difficult’ class that year which had ‘low starting points’ when they entered her class. The phonics check was an important aspect of her job role, and she was already providing extra practice to those who would not otherwise meet the government pass rate. Teacher 1 expressed the view that “it’s such a busy job” when discussing ways of implementing more dialogic approaches, and that time to find out about ways of doing this effectively was limited. Teacher 4 also said that “It’s not that I consciously don’t do it, but there are other things I have to do”. It might be the case, therefore, that implementing dialogic strategies is something that teachers would find easier to implement if there were support provided from school leadership, perhaps as a whole-school approach.

Support of others in the school

Teacher 3, who was interested in PwC, gave the opinion that he would have to ask his head teacher about training, viewing the leadership as the gatekeepers to training. In-service training providers such as SAPERE provide courses which schools must pay for and for which they must release teacher’s time from the classroom. Another option is to use staff training days to train the whole staff body, but this also requires a commitment to PwC which would come from leadership. The teacher then said that if he did want to go ahead and teach, PwC, at least he “wouldn’t have to get everyone on board” because there were not others to teach with. This was an issue that I had also previously discovered when trying to gain research access: one teacher was interested in taking part in the research, but the senior leadership team had vetoed it because the school was four form entry and so they did not want one class out of four (of that year group) taking part when the others were not, neither did they want to implement the research programme as a whole-year-group policy. This creates something of an impasse.

Use of terms

There were two instances where teachers highlighted the use of what might be called specialist terms. Teacher 3 expressed the sentiment that he was interested in PwC, before adding “not that I’m a philosopher”. Teacher 4 did not know what dialogic meant; she thought that it implied ‘logic’. It might be that while the word dialogue is familiar and in common use, the term dialogic is not and therefore I might need to consider this when proposing the study to future participants or when conducting interviews. To return to Teacher 3’s assertion that he was not a philosopher, this accords with impressions that I had made during my own practice: that sometimes teachers seemed to be discouraged by the word ‘philosophy’.

4.2. Observations in Year 2 classrooms

In addition to the four unstructured interviews with the teachers in the previous section, I also spoke with a head teacher. This initially took the form of an informal conversation, during which she, unprompted, expressed the view that she thought that children’s speaking and listening skills (to use her terminology) could be better, but she was not sure how to approach this. She wanted more information about the ways in which children, and particularly different subsets of children, demonstrated speaking and listening skills in classrooms. Together, we agreed that I would conduct observations of dialogue in Year 2 classrooms (because that was the target age group of my research). This became the second element of the development phase, and the aim was to observe the characteristics of whole-class discussions where the teachers did not have specific training in either Philosophy with Children or other dialogue techniques beyond standard teacher training (this was verified ahead of the observations by the head teacher).

4.2.1. Sampling and ethics

The head teacher with whom I spoke gave me access to the five Year 2 classes in her primary school in the south of England. She informed the teachers that she

had been interested in children's speaking and listening skills and how this practice took place in her school – she also made it clear to the teachers that this was not a focus on teachers' practice, but rather on the characteristics of the children. This is important from an ethical perspective in terms of minimising harm in the form of stress at being observed. The teachers had been teaching in the school for between 3 and 15 years and were all full-time teachers.

The children who participated in this part of the research were selected as they were members of the classes which had been chosen for observation. The head teacher considered that that the observations were part of the children's usual classroom practice because they were taking place during classroom teaching. In addition, she wanted to use the findings from the observations to inform practice within the school. This highlights ethical issues within research collaborations between researchers and schools. The head teacher very much viewed this as an opportunity to identify children's speaking and listening practices within the school rather than as an external research project, and for that reason she wanted all of the children to take part as they would in any classroom lesson.

However, I also had ethical obligations to meet. Had I recorded any of the children, I would have needed to inform the children's parents or carers, for example. The head teacher and I decided that she would email the guardians of the children in the classes and inform them that the school was focusing on speaking and listening. The class teachers would tell the children that there would be a visitor in their classrooms who was interested in their talking. I decided that to use a data-gathering approach that would not require me to make audio or visual recordings children or collect any data about them, including their names. Details of this are provided in the Methods section below. There remains the issue that the children's participation was not voluntary, however children's participation in their lessons, the topics they study and so on is not voluntary in their ordinary school life. This presents an ethical issue that is not yet resolved when researchers enter the classroom context for collaborative research such as this.

4.2.2. Affordances and Limitations of classroom observations

In qualitative work, which derives interpretation from research, some consider that there is an argument for the primacy of participant observation as a research method, taking it as a naturally occurring social phenomenon and therefore more valuable. (Atkinson, Coffey and Delamont, 2003). Denscombe (2010) also states that the observation method allows researcher first-hand access to an authentic environment, rather than experiencing it through the filter of another's perspective, such as with conducting interviews.

However, it can also be difficult to make use of the data which are generated through observations. This is partly because observing in an environment such as a school can be overwhelming because of the large number of participants in the classroom, and partly because it is difficult to keep enough distance from the data in order to utilise it effectively (Denscombe, 2010). For this reason, given that I wanted to observe the characteristics of children's talk, I considered it best to employ a pre-determined observation strategy, as detailed in the Methods section which follows this one, especially as I was not making audio or visual recordings of the observations. Using identified codes to structure the observation was a manageable way of capturing the talk characteristics of a classroom of thirty children at a time.

It would, of course, have been more naturalistic to observe children's talk throughout the course of an average school day. However, this would have generated a lot of talk which was hard to access, such as small-group work, where a lone researcher will always miss a lot of talk which is occurring. Therefore the observation was of a whole-class discussion in which talk (even in a Community of Inquiry setting) is more orchestrated and observable over sequential turns.

4.2.3. Methods

Teachers were asked to hold a whole-class discussion with their class (also see Kerslake and Rimmington, 2017). They were given a list of questions from which to choose, which had been adapted from Philosophy with Children literature (Fisher, 2008; Buckley, 2012; Buckley and Bigglestone, 2016). As this was an exploratory

phase, the aim was to observe the characteristics of a whole-class discussion when inquiry questions were presented, and so no further instructions were given to the teachers. The reason for observing whole-class discussions was drawn from practice: many lessons in primary school begin with a whole-class input session to convey information and formatively (Wiliam and Black, 1998) assess previous understanding. Plenary sessions are also typically held as whole-class sessions. While children tend to then carry out learning tasks in smaller groups or as individual tasks, it is a pervasive aspect of a child's educational experience that the introduction to a lesson together with task instructions (and the opportunity to ask questions) takes place as whole-class instruction.

I carried out live coding during the sessions, and tallied the number of times the points of interest below occurred. These were identified from the literature review as characteristics of discussion which would indicate that children were engaged in extended discussion and that discussion was distributed around the group rather than focussing on the teacher-learner interaction. (e.g. Cazden, 2001, Nystrand *et al*, 1997). The categories tallied were:

- Number of talk moments per child
- Number of talk moments which were fewer than 3 words
- Number of times a child made reference to the comment of another child
- Number of times a child asked a question
- Number of times a child gave a supporting reason
- Number of times a child challenged the opinion of another

4.2.4. Findings

The most striking characteristic of the whole-class discussions was that in every case observed the teachers did not move the children from sitting in row formation on the carpet of the classroom. This meant that all of the children could see the teacher, and she or he them, but the children were not able to see each other with ease. Children were, correspondingly, inclined to address their comments to the teacher rather than to each other, and this was manifested as a reliance on a teacher-child-teacher pattern of discourse, which was observed as the exclusive pattern of talk: the teacher would ask for a particular child's opinion, the child would

respond and the teacher would provide a form of evaluative response (such as ‘that’s interesting’, ‘great’, ‘oh, so you agree with X’). This is concordant with the IRF pattern of talk which has been frequently observed in classroom discourse (Cazden, 2001).

The total number of children in the five sessions was n = 142, and the total number of individual utterances, n = 205, over an average of 17.3 minutes per discussion, showed that:

- 39% of children did not speak at all (n = 55)
- 41% of utterances were made by girls (n = 58), and 59% by boys (n = 84)
- There was only 1 reference by a child to the comments of another child
- 27% (n = 55) of utterances were fewer than 3 words
- There were no instances of children asking a question
- 37% (n = 76) of utterances provided a supporting reason, but this was exclusively in response to teacher prompting
- There were no instances of a child challenging the opinions of another
- The pattern of discussion was exclusively Teacher – Child - Teacher

The class teachers also provided me with a list of pupil premium children (those who receive free school meals and additional funding from the government because of low familial income), so that I could include this information in the report to the head teacher. The total number of pupil premium children across the five groups was n = 24. The statistics for pupil premium children using the same categories as above are given below, and these also include a comparison to non-pupil-premium utterances:

- 55% (n = 13) of pupil premium children did not speak at all, whereas 26% (n = 30) of non-pupil-premium children did not speak at all
- Of the 38 utterances by pupil premium children, 50%, (n = 19) were fewer than 3 words
- Of the utterances by non-pupil-premium children, 36, or 19%, were fewer than three words

In this sample, pupil premium children were more likely not to speak than their counterparts and they were also more likely to speak utterances of fewer than three words. Therefore the overall statistics given in the first set of data pertaining to all students is artificially inflated by the pupil premium children, who comprise an above-average percentage of verbal non-participation and shorter utterances.

However, it should be noted that a primary practical reason for parents to declare that that they are in a low economic earning bracket used to be that free schools meals were provided. However, since September 2014, the government provided funding to schools so that all children in primary school years Reception, Year 1 and Year 2 received a free meal at school irrespective of their economic background. According to the teachers participating in this study, and the head teacher, this has led to a number of parents not declaring their income to enable their child to be identified as a pupil premium child, and so numbers are artificially low. The same teachers reported that, typically, when a child enters Year 3, and the parents would have to begin to pay for a school meal, the number of pupil premium children increases.

For this reason, I have decided not to consider pupil premium children as a sub-group in further research iterations in this study. It would not be possible to gain an accurate number of the children in Year 2 who were pupil premium children without asking their parents for details of their income.

Interestingly, Howe and Abedin (2013), in their review of the characteristics of research into dialogue, found that research which considers social disadvantage as a focal point was conducted at the earlier timeframe of their sample. They suggest that the topic of social class difference “may have been exhausted as early as 1972” (p. 335). Therefore it is perhaps not an appropriate focus for this thesis, however it seems like there might be more to say on the topic, given that there are still disparities between pupil premium children and others.

To conclude, a clear outcome of this study was that the nature of the question (the list of questions can be seen in Appendix 2) as a philosophical one does not necessarily result in a discussion which is recognisable as philosophising, or takes place within a Community of Inquiry (both of which are discussed in the literature review). These teachers were all trained in English teacher training programmes, yet

this did not provide adequate preparation for carrying out these kind of discussions which deviated from their established classroom practice. This indicates that either additional training is required, or a resource which provides clear and detailed instruction as to how to facilitate a Community of Inquiry without extensive additional training (to which there are cost and time barriers).

4.3. The School Context

An additional element of the exploratory work was an examination of the policy documents and external influence with which teachers are likely to come into contact in their professional experience. As DBR stipulates that research must take place within an authentic setting, considering policy elements is a factor which should be considered when designing an intervention which will be implemented within a practical setting, as schools must adhere to these.

4.3.1. Spoken Language in the National Curriculum

The Primary National Curriculum refers to discussion-based learning as Spoken Language (Department for Education, 2013). The description below is the Spoken language requirement for pupils across all ages of UK formal schooling (age 5-16):

> Pupils should be taught to speak clearly and convey ideas confidently using Standard English. They should learn to justify ideas with reasons; ask questions to check understanding; develop vocabulary and build knowledge; negotiate; evaluate and build on the ideas of others; and select the appropriate register for effective communication. They should be taught to give well-structured descriptions and explanations and develop their understanding through speculating, hypothesising and exploring ideas. This will enable them to clarify their thinking as well as organise their ideas for writing. (Section 3.1)

Compared to the document as a whole, the descriptor for Spoken Language is short, comprising only one page of the document. There are also no specific criteria

for different stages of primary education, unlike for subject content. This indicates that spoken language is not considered a subject as such, but rather a vehicle for other learning to take place.

This view is critiqued by Mercer and the Oracy Cambridge team[2], who claim that speaking and listening are skills which should be considered as a subject in themselves, under the heading of oracy. The term oracy was coined by Wilkinson in the 1960s (Wilkinson, 1968) as a counterpart to literacy and numeracy to invoke talking skills as a set of skills which should be developed within the education system as literacy and numeracy skills are. However, it has never received the prominence of its counterparts.

Mercer and colleagues (2016) have developed a framework of oracy skills, which comprises four areas: physical (e.g. tone, projection); linguistic (e.g. choices of vocabulary and grammar); cognitive (e.g. building on the views of others, reasoning); social and emotional (e.g. turn-taking, confidence in speaking). These are intended to provide a broader set of criteria and to focus on developing rounded competencies in oracy by providing criteria for each area. These do have commonalities with the descriptor in the National Curriculum, however they provided greater detail than in that document.

4.3.2. Ofsted

Alexander's (2004) view is that writing is seen as the only 'real' schoolwork. He also writes of a cultural lack of importance attached to educationally-developmental uses of talk in the UK classroom. Certainly, a theme which emerged from all of the exploratory discussions which I had with the four teachers was that English and maths took priority within the schools, and Ofsted were perceived as being concerned with English and maths teaching and learning, as well as results in testing. The head teacher with whom I spoke cited examples of other local schools who could 'get away with' doing Philosophy with Children because their cohorts were

[2] https://www.hughes.cam.ac.uk/about-us/research-translation/oracy/

more successful at English and maths and therefore teachers had time to focus on other aspects of the curriculum.

These views from practice certainly seem to support those of Alexander (2004, 2008), but I wanted to gain a fuller picture by examining Ofsted reports and to identify whether or not Ofsted themselves commented on aspects of dialogue in the classroom, and what types of talk were valued from an inspection perspective.

Sampling

The sample of reports was taken from state primary schools in Devon. These included any schools which are funded by the government (including free schools, academies and schools part of a multi-academy trust). The sampling excluded private schools and also those which were classed as a 'special' school for children with additional needs.

The reason for Devon Ofsted reports being sampled was that at the time I was living and working in Devon; however, the county of Devon is a large one, which includes urban (albeit not large), rural and coastal areas and therefore also provides a good geographical variation of school contexts.

The reports examined were those which had been published during a two-year period, December 2015 – December 2017. All Ofsted reports are freely available at https://reports.ofsted.gov.uk, where one can search for a specific school, or by location. I used the search term 'Devon' and then further refined the search to primary schools. I then conducted a manual filter as the type of school is identified in the information about the school accompanying the report. In total, this generated a sample of 77 school reports.

Method

From the literature review, I identified the categories which were pertinent to dialogic thinking. These consisted of:

- Questioning

- Oracy
- Dialogue
- Thinking
- Critical
- Collaboration
- Discussion
- Talking

This was not intended to be a prescriptive list, but rather one which acted as a guideline for an initial reading of the reports, allowing for additional categories to be added during the report-combing process. I read through each school report which met the criteria for the study, selecting those which pertained to the categories above, plus any additional ones which also were relevant.

School Ofsted reports are divided into categories, and so I also divided the comments into these categories to indicate in which aspect of the school inspection they occurred. Finally, I grouped the relevant comments according to school inspection category. Schools are given a rating for each different category, so where a school might overall be given a rating of 'Good' this might comprise some Outstanding elements.

Findings

The following table lists a selection of comments which correspond to the overall school inspection, and provide an overall indication of the type of comments which refer to the skills and dispositions which comprise dialogic thinking:

Table 4.2. Comments from Ofsted reports

Requires Improvement	Good	Outstanding
1a) They do not possess a curiosity for exploring new ideas and grappling with them intellectually (AP)	2a) Pupils are encouraged to talk about their learning in some depth. This has supported improvements in mathematics as they are able to reason and think about their work. Pupils confidently share their ideas and explanations, which helps	3a) Pupils also co-operate well by sharing ideas…as a result, help each other to learn (B)

	them to deepen their understanding (AP)	
1b) [Teachers] generate interesting class discussions in which some pupils, but not all, contribute (QT)	2b) Teachers are particularly skilled at questioning pupils of all abilities to check their understanding and to challenge their thinking (QT)	3b) During mathematics in Year 6, pupils advanced their understanding of probability by thinking about and then discussing their ideas. (AP)
1c) Often communication and language skills are less developed (EYFS)	2c) Teachers place a high focus on talk (QT)	3c) [Pupils] learn to respect the views of others through their class discussions (B)
1d) Teachers do not provide consistently good opportunities for pupils to develop their reasoning skills (QT)	2d) Children do especially well in speaking and listening even though many have poor speaking skills and a very limited vocabulary when they start school. This is because all adults encourage children to describe their thinking and do not accept one or two word answers (EYFS)	3d) [Teachers] routinely challenge with probing questions which makes pupils think deeply (QT)
1e) Pupils' thinking skills are not supported effectively by the activities set in key stages 1 and 2 (QT)		3e) Pupils appreciate the value that all adults place on their opinions. In response, pupils confidently offer ideas about the methods they are to use to improve their learning (QT)
		3f) [Teachers] welcome the excellent opportunities they have to develop and share their teaching skills (LM)
		3g) They enjoyed responding with skill to high-quality questioning from their teacher and fellow pupils. (AP)
		3h) Excellent use is made of the outdoor space for helping children to learn to share and to discuss each other's ideas (EYFS)
		3i) Many children speak confidently and at some length (EYFS)

Key to codes used in the table
EYFS – Early Years Foundation Stage
LM – Leadership and Management
QT – Quality of teaching
AP – Achievement of Pupils
B – Behaviour

Where a school requires improvement (RI), many of the comments refer to English and maths teaching (not shown here), with fewer relating to children's discussion, whereas many reports for schools which are judged to be outstanding include comments on children's ability to discuss ideas to advance their learning (3a, 3e).

Even in RI schools, there were positive comments about pupils' mutual respect and listening to each other, but these were primarily in the Behaviour section. Good and Outstanding schools referred to this in Teaching and Learning or Pupil Outcomes sections. The latter two categories of school had also been given comments which made explicit reference to learning gains or to specific subjects, such as maths (3a and 3b). In RI schools, there was reference made to children's discussion and thinking skills within the context of the quality of teaching (1b, 1e, 1f), highlighting the role of the teacher in foster such approaches in classrooms.

Schools which had an overall rating of RI often had an Early Years Foundation Stage (EYFS) rating of Good, with a number of comments referring to pupils' communication in the Reception year of schooling as developing well, even where this was not evident in later years of schooling. This may be because the EYFS has its own framework (DfE, 2017) which in which Communication and Language features as its own section and is given equal weight to the other sections for children's development.

This is in contrast to the National Curriculum for primary schools, which, as was seen above, offers considerably less guidance for Spoken Language than to other aspects of the curriculum, and does not provide a detailed breakdown of the development of children's language skills as does the EYFS framework. The Communication and Language section is itself divided into listening and attention, understanding, and speaking. An example of the criteria from this framework, presented in stages by age in months is shown below:

30 to 50 months	• Listens to others one to one or in small groups, when conversation interests them. • Listens to stories with increasing attention and recall. • Joins in with repeated refrains and anticipates key events and phrases in rhymes and stories. • Focusing attention – still listen or do, but can shift own attention. • Is able to follow directions (if not intently focused on own choice of activity).
40 to 60+ months	• Maintains attention, concentrates and sits quietly during appropriate activity. • Two-channelled attention – can listen and do for short span.

Figure 4.1. Breakdown of stages of development for EYFS Listening and Attention[3]

In the reports for Outstanding schools, inspectors had also noted that discussion was a feature found throughout the whole school, implying a cultural shift (3e). This also extended in one case beyond student learning to staff development (3f). This acknowledgement of the importance of a whole-school culture, including the experiences of staff toward their own learning, is a distinctly dialogic one.

4.4. Discussion

The exploratory study was composed of unstructured interviews with primary teachers, observations in primary classrooms, a review of the National Curriculum and analysis of Ofsted reports. They were employed in the answering of two research questions which form the subheadings of this discussion.

In terms of research methods, the observations were suitable in this instance as part of an exploratory study in which there was not the scope to make detailed observations, and having a pre-defined set of categories does indicate the nature of the discussion as defined by previous literature. However, classroom discussion is such a multi-faceted activity that, having observed those these discussions, the representation of the discussion in the numerical terms presented above table felt unrepresentative of the actual experience.

[3] https://www.foundationyears.org.uk/wp-content/uploads/2012/03/Early_Years_Outcomes.pdf

4.4.1. What elements of dialogic thinking are important for children in the target age group to develop?

Engagement

The figures from the observations highlight that a high proportion of children did not participate verbally in whole-class discussion. This, in part, is due to the pattern of talk in which responses to the teacher featured heavily. It is an obvious point that if the teacher talks less, then the children will be able to talk more. However, the teacher interviews also provided additional information on this point, identifying that there are 'the usual suspects' who are keen to speak, and others who are not. Research literature, such as Hennessy *et al* (2016), indicates that participation is important for dialogic learning. One of the teachers themselves said "it would be good to know what some of them are thinking" (Teacher 2).

Hofmann and Ruthven (2018) write that changing classroom norms toward the dialogic requires "buy in from all participants" (p. 510). For example one norm expressed in these authors' study of 12 teachers in 14 secondary classrooms was that everyone should contribute to the discussion. If all participants are expected to 'buy in' to these norms then an intervention, particularly one in primary schools, when children are beginning to develop these competencies, should consider how best to enable all children to contribute to the dialogue – and this might mean including non-verbal dialogue so as not exclude that those that do not yet have sophisticated linguistic structures at their command.

Demonstration of a range of inquiry approaches

Comments from Ofsted reports indicated that there are some strategies such as high quality questioning (3g) and sharing ideas (3a) which lead to discussion and advancement in learning in curriculum subjects. The National Curriculum document also indicates that children should justify their ideas, build on other's ideas and ask questions to check understanding, alongside a number of other criteria for effective spoken language. These criteria have all been highlighted as important for productive classroom dialogue. The observations, while providing an opportunity for

discussion, did not result in a display of a range of inquiry strategies while the questions were discussed – for example, there was very little questioning or justification. This limited the development of the dialogue as an idea was never explored in depth, or challenged.

The opportunity to engage in meaningful discussion

The criteria in the National Curriculum comments, while broadly in line with those for productive classroom dialogue are problematic in that they are presented out of context. This gives rise to further questions about the nature of classroom dialogue: about what do children dialogue? One of the Ofsted comments (3b) connects dialogue to learning in maths, but a solely curriculum-based approach can be problematic as dialogue is used in the service of something else rather than as valuable in its own right. It also does not explain how dialogue can actually be taught, an issue which was identified by the Oracy Cambridge team. One of the teacher's comments was "sometimes we talk about the news", which could be a productive stimulus, but this was acknowledged as being done sporadically. Therefore one element of dialogic thinking which should be considered for the intervention is the stimulus that is provided for discussion.

4.4.2. What are the barriers to the development of these skills and dispositions in current teaching practice?

Engagement of all students

The engagement of all students was an issue highlighted throughout the exploratory study. The observations indicated that even where there was the opportunity for discussion, a sizeable proportion of children did not verbally participate, and this was corroborated by comments from Ofsted, that even where interesting discussions were held, not all students contributed (1b). Teachers also held this perspective, one commenting that getting some children to take part in discussions was "like pulling teeth".

The demands of the teaching role

The teachers interviewed all perceived their role as a multifaceted and demanding one in which, in the words of one practitioner, “there’s always so much to do”. Quite often, what there is ‘to do’ is focussed on English and maths teaching and assessment, as well as other national testing such as the phonics check. This was corroborated in part by the Ofsted reports which focussed more on children’s attainment and progress in English and maths, and it was a lack in these subjects which resulted in a Requires Improvement rating. Outstanding schools, however, had many more comments pertaining to thinking and talking collaboratively, and so while these are valued, it would be reasonable to say that they are not valued as much as English and maths (to be clear, ‘English’ here means written English and reading). The demands of the teaching role led one teacher to say that, although she was interested in classroom dialogue, there was not the time to be able to find out how this might be done. This indicates that any approach taken for an intervention should not require extensive teacher training and should be a resource which teachers can use based on their professional knowledge.

A fragmented approach

Ofsted comments (3d, 3e) indicate that approaches to dialogue are best approached consistently and by all adults in the school. A tension between individual interests of teachers and school policy as a whole was also noted in the teacher interviews, because while individual teachers may be interested, the head teacher may act as a gatekeeper for in-service training opportunities. However, it seems a privation for teachers who are interested in changing their practice to not be able to easily access the means to do so.

Another aspect of the fragmented approach is that, while it might seem an advantage to be able to “dip in and out”, as one teacher termed it, this approach does not allow for a sustained embedding of practice. Particularly with respect to the dispositional aspects of the Community of Inquiry, these are developed by forming a community with practices such as talk rules to guide behaviour. This, it seems, would

be harder to achieve if only done sporadically. This could also be a factor in engaging all students rather than “the usual suspects” (Teacher 1).

4.5. Refining the design framework

The data gathered in the exploratory study has led to a revision of the design principles for further development of the intervention. The principles below revisit the previous ones which followed the literature review and these are added to in order to take into account the additional data.

4.5.1. Revising the design principles

The high-level theoretical design principles developed from the literature were that an intervention to develop the dialogic thinking skills of six- and seven-year-old children should:

- **Develop relational dispositions for critical thinking as a collaborative activity**
- **Develop the process of philosophising in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

This iteration has developed these principles by developing sub questions for investigation in authentic practice, as indicated for this phase of the design framework:

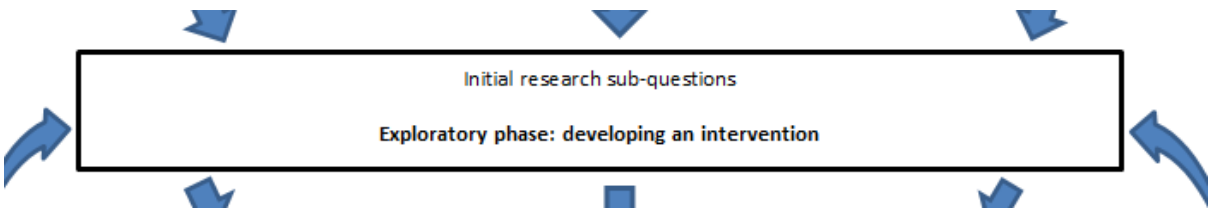


Figure 4.2. Current stage of the design framework at the end of iteration 1

This iteration provided information to be able to add to the initial design principles with ones which indicated how an intervention could be designed for the practical context of six- and seven-year-old children in English classrooms. There were not indications in this iteration that any of the initial design principles should be revised. The additional design principles generated were that:

- The content and format of the intervention should be accessible to practitioners with no need for extensive additional training
- The intervention should take the form of a coherent strategy
- The intervention should promote ways for all children to engage in dialogue

4.5.2. Design framework 2

The high-level principles are provided in bold, and the refinement of the framework provided as a result of this iteration has been given the number 1 to indicate where in the design process they originated.

A teaching and learning intervention to develop the dialogic thinking abilities of six- and seven-year-old children should:

- **Develop relational dispositions for critical thinking as a collaborative activity**
- **Promote argumentation language in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

1) be easily accessible to teachers in terms of the content and the format in which it is presented. If this can be done with no need for additional training then this would be of benefit to individual teachers

1) take the form of a coherent strategy

1) consider ways in which all students could engage in dialogue

1) incorporate open-ended inquiry discussion

The next stage of the study was to use these principles to design an intervention which embodied the principles generated to this point. This is reported on in Chapter 5.

Chapter 5. Developing an intervention: The Playground of Ideas

This section reports on the way in which the intervention was developed using the information gathered from expert consultation, classroom dialogue observation and policy information and presented in Chapter 4. It also draws together strands from the literature review in order to inform the intervention development, which was named the Playground of Ideas. A primary challenge was that definitions of the skills required for critical thinking or argumentation as a process are abstract, or not easily delineated into terms suitable for children of younger ages. As a reminder, a section of the definition of critical thinking from the Delphi Report is given here. The key abstract terms are highlighted in bold:

> "self-regulatory judgment which results in **interpretation**, **analysis**, **evaluation**, and **inference**, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (Facione, 1990)

These terms are also part of Community of Inquiry practice as means of investigating beliefs and knowledge. Even when these are translated into terms which are more familiar in education practice, such as 'compare and contrast', these terms still require a good deal of explanation, modelling and practice, and as such are usually applied in the education practice of older children.

Therefore the aim of the intervention was to find an appropriate way of translating these skills into a form that younger children could begin to use. This aim is also the case for dialogic dispositions as the literature review highlighted that previous research has indicated that types of behaviours such as listening to each other,

engaging in the sharing of ideas with each other rather than the teacher, and putting forth one's own viewpoint whilst attending to that of another are key for developing dialogic interaction. Yet this too is problematic, as Kuhn (2010) indicates, this places a great demand on learners, particularly younger ones.

Another aim of the intervention was to find a means of supporting the development of dialogic thinking skills and dispositions in a way that would be familiar to all children, or as many children as possible. This is also coherent with a DBR approach in which, although data is often generated at a local level, an intervention should be generalizable and scalable (Bakker, 2018). This would not be possible if the intervention developed in this study was done so with only a localised group of children in mind.

As Lewis (1969) writes "Conventionality is at the centre of communication. For communication to be effective there must be a referential symbol system that is shared among speakers" (cited in Callanan, Siegel and Luce, 2007, p. 86). This comment refers back to a Wittgensteinian conception of language use; as Wittgenstein wrote "thinking is essentially the activity of operating with signs" (Blue Book, cited in Harre and Gillett, 1994, p. 50). It also accords with Mercer and Littleton's (2007) assertion regarding research into dialogue that "classroom dialogue depends on speakers understanding the rules of the game" (p. 5). The problem with imprecise or misused language is that it leads to conceptual confusion – such as confusion over exactly what is meant in definitions of 'argumentation', 'critical thinking' or 'dialogic'. For children to be able to develop competencies in these areas, the representation of these concepts must be presented as such that concepts are clearly defined and appropriate for the age group. Wittgenstein compared this to drawing a map that will help us find our way around in the field of concepts and conceptual structures (Wittgenstein, 1961, 4.01).

The idea of representing concepts, and the use of signs and symbols, was a vital one for the development of the Playground of Ideas, because it led me to think in broader terms about how to present concepts rather than just through the use of written language. This line of thinking led me consider a pictorial-based approach to the intervention, visually connecting concepts from argumentatio and dialogue to images which would be familiar to children, and providing their own conceptual map.

There were a number of possibilities which were rejected – one cannot assume that a city child will be familiar with the countryside, or that a child brought up in a rural area will have visited the seaside. Images which one might familiarly see in one country might not be familiar to children of another (thinking about scaling in a wider sense beyond the English education system). One aspect of a child's life which I considered might be familiar to a maximum number of children was visiting a playground, which can be found not only on school grounds but very widely in public spaces in a range of communal contexts.

I wanted to map dialogic thinking skills and dispositions onto play equipment which is commonly found in playgrounds in order to produce a conceptual map to support the development of these competencies in younger children. Of course, this was a conjecture: while the rest of this section comprises how the development of the Playground of Ideas was carried out in conjunction with practitioners, finding out how children responded to the images, and whether or not they were able to use them as a 'map' for the concepts they represented, would therefore be the key focus of the next iteration in order to answer the main research question.

5.1. The Playground of Ideas: Considering visual literacy

Given that the age of the children with whom the intervention was carried out was between five and seven years old, it is clear that there would be issues with assuming literacy. Phonics teaching in schools begins at age four or five with the decoding of single phonemes, and by the age of the target group progresses to the reading of predominantly decodable and high frequency words (DfE, 2013). Therefore only children at the upper end of the age range would be able to access written materials independently, and so an alternative medium was required for this intervention.

Much has been written about the "new communicative reality" (Benitez 2009 p.112) in which technological aids to communication have become modifiers of meaning. A great deal is claimed of the shift to a more visual literacy: Berg and Pooley (2012) claim that it "enables us to break down barriers of language, education and culture" (p. 363). They go on to make comparisons between the

restrictions of spoken language and the freedom for meaning making that visual languages afford when people can create rich pictures to illustrate their experiences, resulting in interactions which are more dialogic. Danesi (2017) reiterates this point, claiming that visual literacy in digital communication is part of a trend toward the unification of human communication. However, as a number of examples in his book on the use of his emoji illustrate, meaning is commensurate with cultural experience. There are no first language users of communicative iconography; use therefore becomes situated in the other linguistic and cultural competencies of its users.

The point of this is that although visual language is a solution to the pre-reading age capabilities of the participants in the study, there cannot be an assumption that visual language will therefore be more easily accessible. The Playground of Ideas uses the iconography of the playground, which is being understood to represent different dialogic thinking skills and dispositions. However, it must be presented to the participants so that they also understand it as such.

Therefore a research sub-question to emerge from this aspect of the intervention design is:

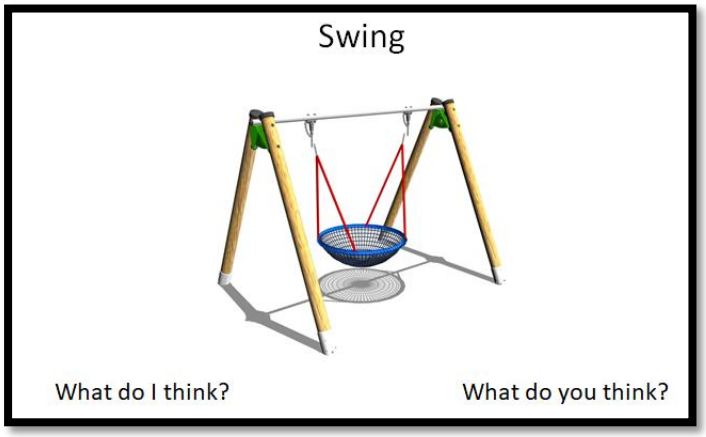
1. **How do the children understand the images that I have chosen as representative of the dialogic critical thinking concepts that they intend to exemplify?**

5.2. The Playground of Ideas images

Following the exploratory fieldwork and consideration of policy documents detailed in the previous section, together with the literature review, and the exploratory discussions with teachers, I extrapolated five areas on which to focus the intervention to develop dialogic thinking. It was clear that these would not only be skills-based, but would also be dispositional. It was also clear that this could in no way be considered a complete set of the skills and dispositions which would comprise dialogic thinking in its entirety. Rather, the initial set of areas is proposed to allow young children to begin to develop the competencies of dialogic thinking:

however, the selection of these is at this stage a theory-guided proposal and will be revised if necessary when tested in practice.

5.2.1. The Swing



The Swing was the first image presented to children. The reason for this is that children can physically demonstrate their thinking. When a teacher asks a grammatically closed question (one with a binary choice of answers, e.g. ‘yes’ or ‘no’, see section 5.4.1.), children move from one side of the classroom to the other to demonstrate their agreement with either side. Those children who have not made up their mind can stay in the middle of the classroom and be on the swing. As children start to explain why they have chosen to stand where they have, other children can ‘swing’ with their arguments and move from one side of the classroom to the other.

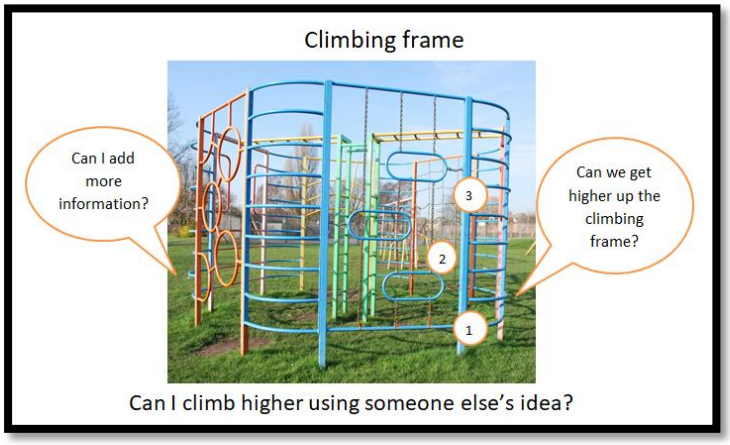
A potential advantage of this approach is that children can listen to others’ reasons and choose their own position (and demonstrate to their teachers that they are doing so) without having to verbalise their own thinking if they do not want to at this stage. This fulfils one of the design principles which is to provide an intervention which increases participation in dialogue.

5.2.2. The Slide

The Slide highlights that children may not yet be able to confidently express their ideas in a whole-class discussion (DfE, 2013). The addition of this piece of equipment was drawn from practice (my own and other teachers) and the observation that whole-class discussions tend to be dominated by a smaller group of more vocal children, while others do not volunteer information. The Slide connects embodied feelings of anxiety at speaking in public to the feeling that one has sitting at the top of a tall slide.

The aim of the Slide is to acknowledge that that some children do not feel as confident at sharing their ideas, and to ask those children to consider what it would feel like to go down the Slide – I hypothesised that the experience of doing something physically demanding in a playground and then the feeling of accomplishment when one has been able to do it would be one which was familiar to a large number of children. Another aim of the Slide is also to signal to those children who are more confident that this is not always the case for their classmates, and in realising this that they may – although this was yet to be borne out in observations of practice – begin to consider their own role in making space in the dialogue for others.

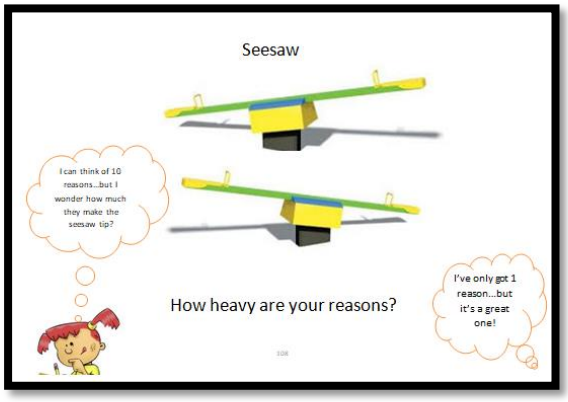
5.2.3. The Climbing Frame



The Climbing Frame was included in the initial design as a means of supporting children to attend to the comments of each other rather than to the teacher, as this was identified as an aspect of discussion that may require more support. The teachers in the initial discussion reported that children were better at thinking about what they wanted to say rather than listening to another first in order to direct their comments. The observations, as well as previous literature referring to IRF talk also indicated that classroom interations may be more likely to follow a teacher-student format rather than interaction between students. This addresses the dialogic element of dialogic thinking – to attend to all of the voices in a dialogue and address them.

However, the aim for the Climbing Frame was also to support elements of reasoning within the children's discussion. The stimulus picture, shown above was intended to alert children to the idea that other children may give incomplete responses, such as not providing a reason for an idea where one might be expected. By introducing an image indicating that they could contribute to another's thought in order to provide more information for an idea, I conjectured that this could lead to collaborative reasoning, and also providing a normative model for children to be able to share half-formed ideas and opinions for other children to build on.

5.2.4. The Seesaw



The Seesaw is a piece which metaphorically gives reasons a weight: as with a real seesaw, the 'heavier' the reason, the more the Seesaw will tip. This was intended as an introduction to evaluating arguments. In the practical context it was actualised by laying a strip of masking tape on the classroom floor which represented the seesaw. A small number of children would give a reason for opposing arguments, and then the class would decide which they thought were the better reasons, and why, and therefore for which argument the Seesaw would tip for. To give an example of the session content for the Seesaw, I gave children a contentious statement appropriate for their age. The class teacher said that many of the children had enjoyed a book by a particular author, and my statement was 'Books by this author should be the only books used during literacy this year'. Children were asked to decide whether or not they agreed with this statement and to stand on one end of the Seesaw or the other and give their reasons. The class would then decide which they thought were the best reasons and why this was the case.

5.2.5. The Roundabout

The purpose of the Roundabout is for children to begin to undertake the role of facilitators in their own discussions by noticing when they have been hearing the same ideas posed repeatedly, causing the discussion to stagnate, or go 'round and round'. Depending on the session content and the nature of the discussion, this could be resolved in various ways, for example by bringing in a new idea, or by connecting some of the previous discussion together.

The Playground of Ideas images and their corresponding area of dialogic thinking are summarised in the table below:

Table 5.1. A summary of the Playground of Ideas images

Playground image	Corresponding development of dialogic thinking
Swing	Speculating, hypothesising and exploring ideas
Slide	Conveying ideas confidently
Climbing frame	Building on the ideas of others Justifying ideas with reasons
Seesaw	Evaluating
Roundabout	Maintaining the momentum of discussion

5.3. Developing the session content

The conception of the Playground of Ideas is that it could act as an argumentation schema for young children to participate in a Community of Inquiry, and the philosophical questions are a vehicle for that schema. In this study I will not be examining philosophical thinking as a specific category, in part because identifying and assessing philosophical thinking is poorly delineated and there is almost no research tradition of this (Costello, 2010). However, a schema of argumentation could be more helpful in identifying reasoning in dialogue. Costello identifies a number of processes of argument as a schema which resulted from a project which studied argumentation in primary and secondary schools (Andrews, Costello and Clarke, 2013). He states that these are not necessarily specific to a particular age group, but it is not possible to incorporate all 26 items on the schema into a 10-week intervention for this age group. 10 weeks was chosen as a time frame that would fit into one school term in order to carry out the multiple iterations within the research period. Therefore, the focus on philosophical questions provided open-ended stimulus for inquiry in order for children to trial the argumentation schema of the intervention. This section considers how that content was developed.

Spaemann's (1983) definition of philosophy is that it is a "continual discourse on the subject of ultimate questions" (p. 105). This definition is helpful in two ways, firstly because it includes a conception of the activity of philosophising – as 'continual discourse' which is coherent with dialogic approaches, and secondly because the subject matter is 'ultimate questions'. Of course the concept of what constitutes an ultimate question may itself come under discussion, but looking to the kinds of questions which have been asked throughout the tradition of philosophy is a useful approach.

One particularly helpful way of conceiving of ultimate questions in the classroom context is those which have been discussed throughout centuries of philosophical discourse with either no clear resolution, or where there are at least two distinct oppositional viewpoints (for example in ethics, taking a Kantian or Utilitarian approach).

As has previously been discussed in this and previous sections, the content of the sessions was drawn from PwC inquiry to provide open-ended discussions which were not linked to any curriculum content. However, a clear factor in developing session content is that I could not assume any previous experience on the part of the teacher or the children with PwC. The following section highlights this issue within PwC, and the focus on questioning which can mitigate for this.

5.3.1. Questioning in PwC

One of the issues in PwC practice today is whether the children or the facilitator should generate the questions for discussion. There are a number of practitioners who believe that it is the facilitator who should chose the question. For McCall (2009), the facilitator, who should have a philosophical background, should choose the questions in order to ensure philosophical content.

This is in contrast to Lipman's method, in which the strategy is for the leaners themselves to select a question that interested them. There is merit in this method, argue Mohr Lone and Burroughs (2016), because then it ensures that the learners are discussing a question that is interesting to them. This view accords with Lipman's (2003) that the starting point of authentic inquiry is a meaningful topic for discussion. For Lipman, when the children generate questions and democratically decide which to discuss, this is a "pivotal moment" in the inquiry. If the facilitator chooses the question to be discussed from the children's output, this will constitute a return to the "old authoritarianism" (p. 98).

However, a number of the organisations (e.g. The Philosophy Foundation, The Philosophy Man) which provide philosophy sessions in the UK currently advocate the provision of questions by the facilitator. The Philosophy Man – founded by Jason Buckley – offers the rationale that this makes it more fast-paced and versatile for use across the curriculum (2012). Similarly, at a workshop on questioning which I attended at the International Council of Philosophical Inquiry with Children (ICPIC) conference in Madrid in June 2017, Peter Worley promoted the initial question of an inquiry to be a 'conceptually open, grammatically closed' one provided by the

facilitator, and then the children generate their own questions based on the conceptual discrepancies arising from this initial question.

So an example of a 'conceptually open, grammatically closed' question might be from the stimulus of Theseus' ship (Worley, 2010) in which the initial question is 'Is it the same ship?' This is grammatically closed in that it has a 'yes' or no' answer, but conceptually open in that as some of the children answer one way or another, more questions arise from the concepts explored. This ensures philosophical content because it is asking metaphysical questions about identity, form and function.

After consideration of the two approaches, I chose to provide questions for the Community of Inquiry in the PoI intervention, starting from an assumption that teachers will not have a great deal of philosophical background and identifying philosophical questions might be difficult. I also think that if questions are provided, it places both teacher and learner in the same position with regards to the inquiry as co-learners (see section 3.3). Although the questions are provided rather than generated, they are still open-ended questions, or what Nystrand *et al* (1997) terms authentic questions: those without predetermined answers which are already known by the teacher. This also accords with Spaemann's use of 'ultimate questions'. In the context of the Playground of Ideas sessions, the questions mostly come from the spheres of ethics and metaphysics (questions about the nature of reality). I take Nagel's position that "the centre of philosophy lies in certain questions which the natural human mind naturally finds puzzling" (1987, p. 4), and have adapted those questions which have endured throughout (sometimes) centuries of discussion without clear consensus.

This structure of the Playground of Ideas sessions first of all encourages children to answer 'yes' or 'no' to questions. The initial questions are in a simple 'Would you rather…?' format, for example 'Would you rather be rich or clever?' The Swing allows children to move to opposite sides of the classroom depending on their answer so that each member of the class can see each other's thinking, and that some children have thoughts different to their own. This forms the basis for the discussion: children must then give reasons for why they have chosen their answer, other children may counter with their own reasons, and then children may move to a different side if they have changed their mind.

A further example of a question is ‘Is it better to make one person very happy or 10 people a little bit happy?’ This occurs in one of the first sessions, but the same concept is revisited in later sessions with the Trolley Problem (Foot, 1967). This is a well-known ethical dilemma in philosophy, in which a train with brakes that have failed is heading toward five people on the tracks, and there is no escape. The only option that one has is to pull a lever and change the direction of the train onto a different track on which there is only one person. The dilemma is: is one ethically justified in pulling the lever?

The problem has the same issue as the first as one must consider the number of people involved when making ethical decisions. The second problem is more complex, however, but it is also introduced once children have had practice with all of the pieces of play equipment. By introducing initial division of ‘yes’ or ‘no’ answers, children must justify their reasoning to each other and understand the underlying concepts behind the question from their own and other’s point of view.

5.3.2. Further developments to the Playground of Ideas design

Having identified the images which would make up the framework and an indication of the type of questions that would form the session content, I then collaborated with a primary school Key Stage 1 teacher to establish how best to write the session plans to accompany the images.

The teacher suggested that the images should be presented one week at a time in order for the children to be able to practice each talking skill. The images are accompanied by a series of lesson plans which introduce the images one at a time, and each session practices that skill through discussion of a philosophical question. As mentioned above, the initial questions – which are also used as warm-up questions throughout the sessions – take a ‘Would you rather…?’ format, and they are also not philosophical in an ‘ultimate questions’ sense. For example, in the first sessions the children ‘practice’ using the Swing by answering questions such as ‘Would you rather be invisible or be able to fly?’. The purpose of this the understanding developed from the literature review that children may have had experiences of schooling in which they are more used to an IRF style of discourse

and these questions would allow them to operate outside of a discourse in which the adult already knows the answer.

The 'Would you rather…' format for warm-up games for each session was developed following the classroom observations in section 4.2, indicating that children may not be practiced in asking each other questions. In the 'Would you rather…' format of the Playground of Ideas sessions, children answer the question that is posed to them, also providing a justification for their answer, before formulating a question to ask to others. Clarke (1995) also advocates the use of lower-stakes argumentation as games, because the "arguer has an experimental space" (p. 25) in which to test out techniques of argumentative reasoning.

Figure 5.1. shows the overall structure of the Playground of Idea intervention and Figure 5.2. gives an example of a session plan. The complete set of session plans can be seen in Appendix 11 (these are the complete set of session plans which were used in the iteration 3). At this stage in the study, I had the concept of the Playground of Ideas and session plans for a 10-week intervention. The next stage was to trial them in a classroom context, which is reported in Chapter 6.

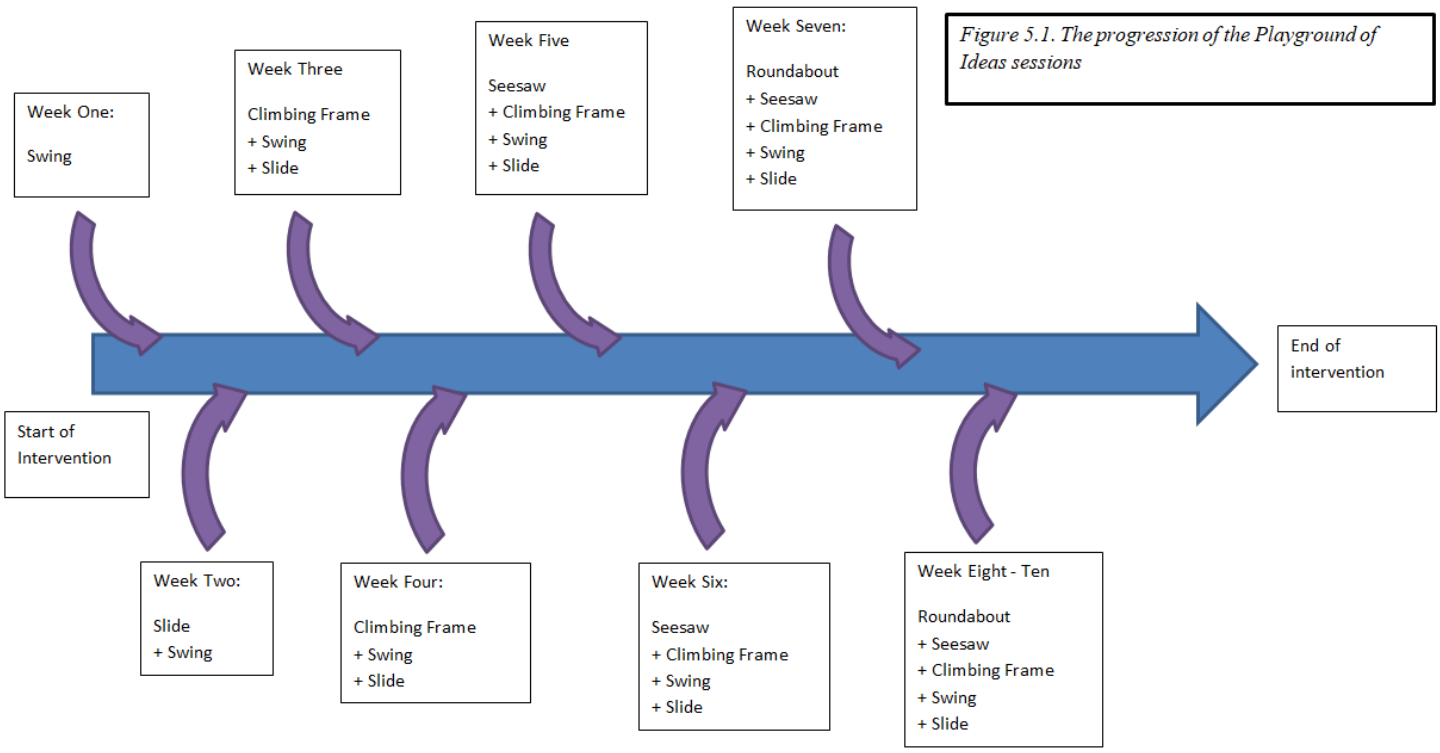


Figure 5.1. The progression of the Playground of Ideas sessions

Figure 5.2. Example of a Playground of Ideas session plan

Teacher information
This session will introduce the Playground of Ideas framework to the children and starts with The Swing. The swing introduces children to giving opinions – the children could be on one side of the swing or the other depending on their opinion, or on the swing if they can't decide. The focus for this session is on giving different opinions only and changing your mind, and further pieces of equipment will introduce giving reasons and justifying.
Lesson Plan:
• Have all the children sat in a circle, either on chairs or on the floor • Explain that we're going to have a discussion where they will share their ideas and listen to others' ideas. In pairs, ask them to think of some talk rules for the discussion. Bring the circle back together and take suggestions, writing them on a big piece of paper. Remind children of the talk rules as necessary. • Have enough copies of the swing to put around the circle so that all children can see it clearly • Explain that for some questions, there isn't an easy 'right' or 'wrong' answer, so children might have different ideas about the same question. Use a 'Would you rather…' question to give an example, e.g. would you rather be invisible or have the ability to read minds. Ask for opinions on this and then take two different examples. • Explain that (Jack) thinks he'd rather be invisible, so he's on this side of the swing, but (Beth) thinks she'd rather be able to read minds, so she's on that side. Then ask if someone can't decide, and explain that means that they are on the swing and could go from one side to the other. • Ask the class to get up and move to one side of the circle if they would be on the 'invisible' side of the swing, one side if they would be on the 'reading minds' side of the swing, and in the middle if they can't decide. Discuss what would happen if someone wanted to change their mind – it's ok to change your mind and move to a different side of the swing if you want to. • Then they come back into the circle. • Ask another question: 'If you put your brain into a robot's body, would it still be you? The children should discuss first in pairs and then come together in the circle • Repeat the process above, taking a yes and no and an undecided, then asking the class to move. • Ask another question if there is time.
Resources:
10 copies of The Swing picture Selection of questions for discussion (see below)
Questions for discussion:
Would you rather be invisible or be able to read minds? Would you rather be a tiger or a shark? (there are lots of variations on this!) If you put your brain in a robot's body, would it still be you? Is it wrong to eat meat? Is it better to make one person very happy, or ten people a little bit happy?

Chapter 6. Iteration 2a: Local trial of intervention

Introduction

To summarise the development of the Playground of Ideas to this point in the study: the Playground of Ideas was developed from the literature review, policy and practice, drawing together strands of critical thinking, argumentation, Philosophy with Children, dialogic education and Community of Inquiry learning. The skills and dispositions identified were exemplified through five items of play equipment commonly found in children's playgrounds in order to be accessible to children in Year 2 (age 6-7). The stimulus questions and activities for each session drew on areas of philosophical inquiry which had been adapted to be age-appropriate for children of this age. Each session took a primarily discussion-based approach which takes place in small groups, pairs, or as a whole class. These last two elements – the stimuli and discussion activities – were developed in collaboration with teachers. The Playground of Ideas was developed in response to the design principles that:

- The content and format of the intervention should be accessible to practitioners with no need for additional training
- The intervention should take the form of a coherent strategy
- The intervention should promote ways for all children to engage in dialogue
- The intervention should incorporate open-ended discussion

However, I did not, at this point, know how the Playground of Ideas images and session plans would work together in a classroom context, neither if the chosen images would represent the dialogic thinking competencies which were intended. The next steps were to trial the resources developed to date within a classroom context: this section details this iteration of the research, including the research questions which are specific to this iteration but also illuminate the main research question. Iteration 2 is divided into two sections: 2a and 2b because there were a number of aspects of the iteration which required trialling from the perspective of teachers and learners, however the research approaches taken were by necessity quite different. The tension was that, while to fully examine how children engaged with the Playground of Ideas required an immersive research approach, to ascertain if the intervention was accessible to practitioners in an extended context required an

approach in which teachers could independently teach intervention sessions successfully. This included fidelity to the implementation of the design, because otherwise “no conclusions can be drawn from the resulting learning effects” (Bakker, 2018, p. 251).

For this reason, two trials of the Playground of Ideas were carried out as one offset iteration to be able to manage these demands. In iteration 2a, the intervention was delivered in a local context with the class teacher and I collaborating to answer the research sub-questions identified in section 6.1.1. Following this, the intervention was revised and disseminated to teachers from extended contexts to teach independently, but the data measures for iterations 2a and 2b were the same in order to be able to compare across contexts and identify if this was an intervention to which teachers were able to maintain fidelity when they were using it independently.

6.1. The research context

I was approached by a school in the south west of England who had heard of my work through a colleague and parent of a child at the school. The head teacher was very interested in introducing Philosophy with Children into her school, and had a number of interested staff members. However, the school had recently had some PwC training delivered on a staff training day, which the head teacher found highly unsatisfactory. I had a meeting with her in which I took hand-written notes. In this meeting she indicated to me that this training had the unfortunate effect of making even those staff members who were well-disposed toward the introduction of PwC to be now less sure of its place in the school.

The school was located in a small rural town in the South West of England. It is the only primary school in the town, and so as such its intake comprises all of the primary-school-aged children in the town. The head teacher indicated that this means that the school has a very diverse intake, with a wide socio-economic divide between some pupils. The head teacher felt that this meant that some children had a lot of ‘catching up’ to do, especially in terms of their talking skills. This was the reason that she had been interested in getting PwC training initially. The outcome of the meeting was that I would work with the Year 2 class in the school to implement the Playground of Ideas intervention.

6.1.1. Rationale for the iteration and research questions

The main focus for this iteration is to gain a better understanding of the practical ways in which the Playground of Ideas can be implemented in classrooms, and to ascertain if this approach is an appropriate one to take in terms of the participants' (teacher and learner) engagement with the concept of the images representing dialogic thinking skills and dispositions.

These are questions which were identified as part of the initial conception of the PoI and some relate to primarily practical matters as to whether or not the images and session plans that were developed are suitable for use in a classroom setting. It is also important to identify if the children are able to connect these images with the concepts which they are intended to represent. Finally, the research design is for the materials to be used more widely and independently than the local context of this iteration, and so considering how to achieve this is another research focus for this iteration. Therefore the research sub-questions were:

1. **Do Year 2 children understand the images that constitute the Playground of Idea as representative of the concepts they exemplify?**
2. **Are the sessions practically implementable in the classroom (e.g. timing of sessions, variation of activity, appropriateness of activity to age group, providing opportunity for discussion)?**
3. **Are there any indications that participants (teacher and learners) are developing the skills and/or dispositions for dialogic thinking?**
4. **How can these materials be taught independently by trained teachers without researcher input?**

6.1.2. How the iteration was conducted

The class teacher and I collaborated before the implementation of this intervention to decide how it would be conducted. At this stage, I had the greater expertise in the Playground of Ideas resources, and the class teacher had the greater expertise on the children in her class, teaching practice, and classroom management. We decided together that the most effective way of answering the research questions for

this iteration would be for me to deliver the intervention sessions and for the class teacher to observe me and give comments to feed into answering the research questions. We would therefore both be acting as researcher-practitioners. There were 27 children in the class. One child did not take part in the sessions due to additional learning needs. All of the other children took part in the sessions which were conducted once a week after lunch on a Wednesday in the Summer term (April-June).

6.2. Ethics

6.2.1. Teacher consent

The class teacher signed a consent form (Appendix 4) which also took the form of a memorandum of understanding (MOU), in which was detailed the requirements and aspects of the research project both from the school and researcher perspectives. The class teacher and I discussed what was set out in the MOU which gave an opportunity for her to raise any questions or make changes before it was signed by both of us.

6.2.2. Informed consent of the children and their guardians

I provided the class teacher with a poster (rather than an information sheet, given the young age of the participants) detailing who I was and why I would be in their classroom (see Appendix 5). She led a circle time activity in which she put up the poster and discussed my research with the class, giving them time to ask questions. I also explained who I was and what I was researching in my first visit to the children.

Each of the children took an opt-out consent form to give to their guardians (see Appendix 4). It was explained in the consent form the children would be audio- and video-recorded. It was also explained that the Playground of Ideas activities themselves would be carried out as part of normal classroom activity, and so it would not be possible to opt-out of the sessions. However, if guardians chose to opt-out of the research project, their children's information would not be used as part of the research project. It was also explained that the only data collected about the children

would be their name and age, and the names would be anonymised. The guardians of one child in the class chose to opt out, citing the child's additional learning needs as a reason.

6.2.3. Anonymity and data storage

The children were all given a codename and their responses were all coded under these names. The school name has been changed and where it is referred to by name will be known as 'Birchtown Primary'. The class teacher's name has also been anonymised and she is either referred to as class teacher (CT) or by the name Ms Eliot. The master list of codenames and real names is kept on my computer in a password-protected document.

6.3. Research methods and methodologies

As is consistent with a design-based approach, there are a number of research methods in this phase. These are detailed below, both in terms of the methodological considerations and also the use of each different format as a method.

6.3.1. Interviewing: affordances and limitations

Interviews were conducted in this iteration with the teacher and with a selected number of the children as a group interview. Each specific interview is given consideration as a method in the relevant section, and this is preceded by a methodological overview of interviewing in the this section.

The aim of this section is to present the possibilities and limitations of the interview as a research method. Interviewing can span a scale of format from closed-questioning that is predetermined by the interviewer to an open-question interview in which there are no predetermined questioned. Whichever one chooses, there are epistemological concerns (Hammersley, 2008) to be taken into account. Whereas a closed-question researcher-led interview might essentially be considered as a 'live' questionnaire, an interview situation in which the participant guides at least part of

the interview arises from the qualitative perspective that the social world is composed of multiple voices, each of which has as much claim to authority as any other and that, as Warren (2001) claims, the "purpose of most qualitative research is to derive interpretation" (p. 83) as there is no "god's-eye view" of the world (Gergen and Gergen 2000 p. 1037).

I conducted interviews with the children in the first iteration in order to discover their experience of the Playground of Ideas. Therefore it was their experiences – which were not my experiences – which were under consideration, and an interview structure which reflected that was needed. As Kvale (1996) states: it is an interviewer's duty to gain "an understanding of the world from the subject's point of view" (p. 1). However, an entirely unstructured interview in which no questions were pre-prepared was not desirable in this content. Askey and Knight (1999) advise that emergent themes can be hard to identify and therefore data analysis is more problematic (p. 9) in unstructured interviews.

However, a semi-structured interview in which some questions are prepared but there is flexibility to pursue responses by the participants, was more appropriate for this context. This is because, as Chew-Graham, May and Perry (2002) write, "the semi-structured interview is intended to elicit the meanings attributed by the subject to a particular research question" (p. 286). Given that this was not an exploratory interview such as the unstructured ones held previously in Chapter 4, but one in which I wanted to be able to analyse the children's and teacher's perspectives on specific aspects of the Playground of Ideas, I needed a flexible form of analysis, but one which nevertheless had themes in the data to identify.

A tension arising within this situation is that I wanted to find out what the children thought of the Playground of Ideas with the view to being able to revise and disseminate the framework more widely to other children. However, a critique of the interviewing situation is that because all responses – and indeed questions – are filtered through the personal lenses of participants, some argue that these filters do not allow for generalizable data to be elicited from the interview. For post-modernists, the qualitative interview "is a simulacrum, a perfectly miniature and coherent world in its own right" (Denzin 2001, p. 25). As such, it does not reflect external reality, nor does it reflect the real self of the interviewee. Denzin argues that

this is because there is no one external reality, nor one inner self. The purpose of the interview is to “create the world” (p. 25). As Denzin writes “to borrow from Garfinkel (1996: 6), there is nothing under the skull that matters” (2001, p. 29).

If this is the case then expecting an interview to generate data on the Playground of Ideas in order to then inform future iterations is futile. However, while it is reasonably expected that different groups of people do have different constructions of the world, this is different from claiming that each individual person has a wholly individual experience of the world. Unlike for such ultimately nihilistic post-modern approaches such as the radical critique of interviewing (rejected by Hammersley, 2008) which eschew any possibility of generalising research because each situation is so specifically constructed, it is not the case that each individual speaks of the world in such a uniquely constructed way that meanings are unintelligible to anyone else.

This connects to previously mentioned literature in the philosophy of language which holds that language is a shared system of meaning which is co-constructed – indeed it may even be the case that what is jointly created in language actually creates thought, in which case the relativist abyss that is feared is unlikely. Butler (2005) also takes this view within her work on performativity: she writes that “a subject can recognize itself, and others, only within a specific regime of truth” (p. 116). This view is supported by others’ work, where the prevailing claim is that to perform (successfully) we have to be understood, and this precludes “an assumption of fluid, ever-changing identities” (Bell, 1999, p. 2).

This does not mean that data from educational research is ungeneralizable, so subjective as to be irrelevant outside of each situated context, but rather there is in fact an argument for the *added* value of data: that performance itself takes place within certain conventions which allow meaning to be made, and, “conventions are enabling”, as Hammersley writes (2008, p. 11). If our performances, and therefore the co-construction of our realities, are situated within sociocultural and linguistic frameworks then we can make sense of these in a research capacity. For Ball, being performative is another way of telling the truth – because fabrications “involve the use and reuse of the right signifiers”, they are not “outside the truth” (2003, p. 224).

6.3.2. Teacher interview

This took the form of a semi-structured interview after a number of the sessions had been taught by me. The purpose of the interview was to gather information of the teacher's perspective of the intervention: its practical applicability as a teaching resource and its function as a means by which children can develop their collaborative critical thinking. I piloted the teacher interview questions with two experts: a PhD student who was a former primary teacher, and a current practicing primary teacher.

I chose to formulate the interview as a semi-structured interview (Appendix 6) because in order to understand how the Playground of Ideas sessions were working in the classroom, I needed the perspective of the classroom teacher who was observing me conduct the sessions. There were elements of which I may not have been aware and would therefore not be able to formulate in an interview question prepared in advance. I also wanted to adhere to the DBR principle of co-construction of research, and presenting a fully-formed set of research questions would not have allowed the teacher's perspective to emerge. For example, Briggs (2003) claims that research interview situations inherently hold a power bias: the very fact that it is the researcher who has requested an interview, and they are asking questions to inform their own work places the researcher in a more powerful position. However, Briggs also claims that semi-structured interviews have the ability to "mitigate the power of the interviewer" (p. 495), because there is not a complete set of questions which must be answered; rather the participant and interviewer can together negotiate what is explored and in how much detail.

6.3.3. Learner questionnaire

Having examined in the previous section the reasons for holding a semi-structured interview with the teacher, which are largely concerned with the flexibility to understand in greater depth the participant's meanings, the learner questionnaire takes a different approach. The main reason for this is that the questionnaire had two functions. The first of these was to ascertain the children's understanding and responses to elements of the sessions in this iteration which had not been achieved

through other research methods. The second function was to act as a comparison between the children who were taught in these sessions by me, as someone with extensive knowledge of the materials, and the children who would be taught by their class teachers who may not have a Philosophy with Children background in iteration 2b.

Iteration 2b was conducted at a larger scale, and was very 'light touch' from a research perspective in order to determine if the resources function outside of the local context. Therefore a questionnaire would be the most pragmatic form of gathering and analysing data across the two iterations.

One rationale for administering a questionnaire was to gain further information about how the children responded to the Playground of Ideas sessions in this iteration. The questionnaire was not developed ahead of the iteration, but was developed in response to information already gathered in the reflective journal and discussions with the class teacher following her observations. The questions were formulated according to these observations and discussions, particularly where the class teacher and I lacked information from our observations and reflections.

Bryman (2008) considers that questionnaires, when designed well, are a good means of collecting participant data because they are easy to use. In order to create well-designed questionnaires for the Year 2 participants, I discussed the questionnaire with the class teacher in terms of the length of writing that children would typically produce and the duration that they would be comfortable to write for. We also discussed the content of the questionnaire, in which both of us shared our observations of the sessions and what we felt could be clarified through a questionnaire. This discussion resulted in the production of a questionnaire (see table 6.2.) for which the class teacher and I co-constructed four questions. I was guided by her experience of how much the children would be capable of writing For example, while I wanted to find out more about the children's views of the pieces of equipment, the class teacher thought that to ask about all five pieces would have been too much written work for the children in this single questionnaire.

Using the entries form my reflective journal, I noted that the Swing was the piece of equipment which the children were most engaged and comfortable. In our discussion, the class teacher and I agreed that the children also seemed to be aware

of the purpose of the Seesaw, as the concept of putting something heavy on one end of the Seesaw making it go down was one with which the children were familiar, and in the sessions they did not seem to have a difficulty in appropriating that concept for the purposes of evaluating each other's reasons. Therefore I asked the children about the Climbing frame and the Slide in the questionnaire.

The questionnaire takes a semi-structured approach in that there are defined questions, but these are open-ended which allowed for more extended responses from the children. I also asked four children who are in Key Stage 1 at a different school to read through the questions to ensure that the reading age of the questions was appropriate for the participants.

6.3.4. Learner group interview

In order to elaborate in greater detail the responses from the children's questionnaires, I conducted the learner group interview to provide more in depth information on the questionnaire responses. This was to enable "a richer picture…from more in-depth probing of a subset of students" (Brown, 1992, p. 157). This approach has the added benefit of creating a Community of Inquiry research method in which the researcher and the learners can explore together the meanings which were made from the experiences of the PoI sessions. I selected the subset of children on the bases shown in the table below using notes from my reflective journal and asked them all if they would take part, to which they all agreed.

Table 6.1. Reason for Selection in group interview

Name	Reason for Selection
Jonathon	In the sessions, he was quite vocal, giving reasons for his answers and confident in expressing his opinion. However, in the questionnaire he did not demonstrate a good understanding of the PoI images and I wanted to explore this in greater depth
Jane	She was very quiet in the sessions, and yet her questionnaire indicated a good level of understanding and so I wanted to be able to talk with her on a small group basis
Lucy	She was very vocal in the sessions and particularly good on the Crowsnest. She did not write a lot to allow me to ascertain her understanding of the PoI equipment, so I wanted to follow this up

Emma	Again, Emma was very quiet in the sessions but she demonstrated good understanding in the questionnaire. She referenced previous sessions well and was one of the few children not to ask a 'Would you rather…' as answer to the last question. Therefore I wanted to talk to her more on a small group basis.
Caleb	A child who demonstrated good understanding of the Slide in his questionnaire. I wanted to bring him in to the group interview in order for him to be able to share his ideas with the others.
Finley	Generally not vocal in sessions but demonstrated reasonable understanding in his questionnaire (particularly the Slide) which I wanted to follow up in the group interview.

6.3.5. Researcher reflective journal

It is Kelly's (2006) view that the issue of researcher bias is one which needs addressing if DBR is to avoid quality issues, and that researchers should maintain a reflective approach to their work in order to maintain awareness of practice. Models of reflective practice, such as Johns (2013) highlight that reflective practice allows one to gain a deeper understanding of one's own practice, thereby uniting one's values and the lived experience of practice. Given that I am already aware of the bias issues within DBR, and that I have a desire to avoid such bias, even considering these questions and seeking remedy means that bias is less likely. Yet to become aware of further issues of which I am not yet aware, keeping a reflective journal seems like sound practice for this project. In addition, this is a sensible idea for a project involving an emerging research domain which I am constructing from other methodologies – a record of exactly how this is done is important for methodological awareness which is a vital consideration in quality issues (Seale, 2002).

In practical terms, many of the conversations with the class teacher took place informally, and she often provided me with oral feedback following the sessions which I delivered. Keeping a reflective journal allowed me to record these conversations.

There is also the final point that as a co-collaborator in this research, with the role of delivering the sessions, my perspective as a practitioner is important in answering the research questions. In addition to my reflections at the time, I also added a section which correlated my reflective journal to other data that was being gathered,

or professional conversations which I had. This was to be able to provide a suitable indication of the ways in which all of the research dimensions fit together. See Appendix 8 for the reflective journal.

6.4. Analysis

This section details how the data from the questionnaire and the interviews was analysed.

6.4.1. Analysis of the data

Given that this was the first trial of the intervention in practice, I did not yet know how the PoI images and session plans would work in a school setting. Therefore I did not want to engage in a form of analysis which would be too restrictive and prescriptive. I took a thematic approach to coding the interview with the teacher and children, which is a "method rather than a methodology, not tied to any particular epistemology, and so it is very flexible" (Maguire and Delahunt, 2017, p. 3352). In preparation for this I attended a two-day workshop on thematic data analysis at the University of Exeter in June 2016. This workshop was very useful: as Boyatzis (1998) writes, "[thematic analysis] has typically been passed from experienced professional to professional in training like the motto of a secret society" (preface, vii). This workshop highlighted the also fluid nature of thematic analysis which allows for themes to emerge from the data. Some key issues to emerge from this approach were the importance of the role of the researcher and the importance of maintaining quality given that thematic analysis is not a clearly defined method. These are discussed below, together with the process of analysis that was undertaken.

6.4.2. A thematic approach: the role of the researcher

In taking a thematic analysis approach, the researcher has a great deal of responsibility for deciding what is important to identify from the data. Therefore a consideration of the perspective of the researcher is also important. Furthermore, in DBR, where the researcher also has a high stake in the intervention or learning

process, avoiding researcher bias can be difficult (Brown, 1992). I bring a particular perspective to the analysis from a theoretical and a professional basis. Firstly, I am taking a dialogic and pragmatic perspective: the teacher's contribution to the development of the PoI was a vital component because the research questions at this stage focussed on the situational application of the intervention. Secondly, I have trained and worked as a primary teacher and so I have experience of the education system.

However, I also have to be aware that my experiences of my PGCE teacher training, in particular, were largely negative in that the training delivered seemed incompatible with what I observed happening in schools. As a result of this, I have come to see the education system in terms of power differentials, an over-reliance on the data from standardised testing and a considerable awareness of the demands placed on teachers, particularly in the sense that their professional judgements and inclinations are quite often subsumed by the requirements of government policy and the school improvement plans which quite often see practitioners' efforts directed in the service of these aims which may have little connection to dialogic teaching and learning practice.

It is important, therefore, to keep in mind that although this is my experience and perspective of the education system, other practitioners may not have this experience and that to impose this interpretation on their comments would be to negate their voice to my own. Moreover, this would be an inappropriate stance to take in this project because I am not a disinterested observer, not merely a researcher but also a practitioner who takes a role within the teaching of the intervention sessions. While this awareness is not enough to eliminate researcher bias in thematic analysis, "consideration of self as a researcher and self in relation to the topic of research is a precondition for coping with bias", (Norris, 1997, p. 174). This consideration can help to reduce such bias.

6.4.3. The stages of thematic data analysis

Thematic data analysis involves "the process of identifying patterns or themes within qualitative data" (Maguire and Delahunt, 2017, p. 3352). Braun and Clarke

(2006) highlight that there are two approaches to thematic analysis: a top-down one which is driven by the research questions, and a bottom-up one which is driven by the data itself. In this case, the approach is a bottom-up one, because the research questions for this iteration are investigating a new and untried intervention and so an open approach to coding is desirable to not miss information and meanings that may emerge from the data. Braun and Clarke identify a six step process to "identify or examine the underlying ideas, assumptions, and conceptualisations" (p. 84) in order to interpret rather than report on the data. These stage are: 1) familiarising yourself with the data; 2) generating initial codes; 3) searching for themes; 4) reviewing themes; 5) defining and naming themes; 6) producing the report (p. 87). However, although for Braun and Clark identifying codes and identifying themes are two separate stages of analysis, Maguire and Delahunt (2017) advise that this is often not possible when there are very small data sets (for example one transcription). In these cases there is "considerable overlap between the coding stage and this stage of identifying preliminary themes" (p. 3356). Therefore I have modified the six step process in this iteration to three stages.

The following diagram gives an overview of the stages used to analyse the data from the teacher and learner interviews as well as my own reflective journal. One of the key reasons for data sources from all of the participants in the study is to look for similarities and differences of understanding between the participants with the aim to gain a clearer picture of how the PoI sessions work in the classroom.

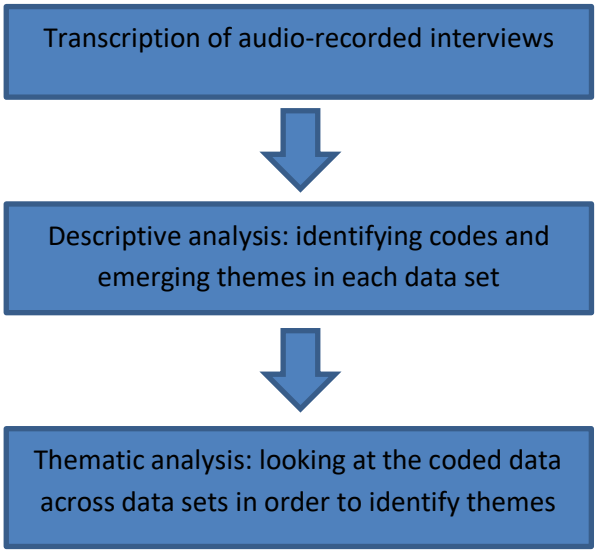


Figure 6.1. Details of the thematic analysis process

In addition to recording the data myself, I transcribed all of the data myself in order to become more familiar with it, as advised by Howitt and Cramer (2011). The workshop which I attended also advised keeping a detailed paper trail as a quality measure and therefore Appendices 10 and 11 show the transcriptions with the original coding which was done, in both descriptive and thematic terms. I also shared my coding with another PhD student as a validity check on my terms. She agreed that the emphasis on the changes to the teacher's perception with the class was particularly important; she also made the suggestion that I focus on the relationship between me and the teacher, which I subsequently added.

6.4.4. Analysis of the questionnaire

The questionnaire was also thematically coded for the reasons given previously. However, the same questionnaire will also be administered in the subsequent iteration, in which the intervention will be scaled and taught by teachers independently of the researcher. Therefore to be able to compare the responses for the two iterations, it is necessary to analyse the questionnaire in a way that is comparable across contexts.

Keys Adair and Pastori (2011) highlight that when data is to be compared across sites, creating a coding framework is a key step to be able to at least organise, but also to analyse, data. Although Keys Adair and Pastori's work was a large-scale, international project, working as a solo researcher on a project which is to be done at scale entails a similar consideration of how to compare data from children in multiple schools.

Creating a coding system to analyse content creates a system by which analysis can be "explicit, transparent and public", allowing data from any other schools which later participate to be coded according to the same system (Mayring, 2004, p.267-269). The table below details the final coding system which was applied to the questionnaire, and the results are discussed in the relevant sections (6.5) following this one which discuss results in reference to each iteration-specific research question. The children's responses are produced here in their entirety because the children did not write a great deal for each question (which was commensurate with

their level of writing, according to their teacher), and producing a transparent paper trail is an indication of increased validity in qualitative research (Seale, 2002).

Table 6.2. Questionnaire responses with coding applied

Question	**What have you liked talking about?**	**Why do we go on the Slide?**	**Why do we go on the Climbing Frame?**	**Which philosophy question would you like to ask?**
Key	References a piece of playground equipment References a particular session question References a 'Would you rather…' question	Level of understanding (lowest to highest) 1. No mention of being brave or talking 2.Mentions being brave OR talking 3.Mentions being brave in connection with talking 3+.Mentions the above and adds more details	Level of understanding (lowest to highest) 1.No mention of adding on or adding ideas 2.Mentions adding on OR climbing up 3.Mentions adding on or climbing up in connection with sharing ideas 3+.Mentions the above with specific reference to the top talking tips	References a 'Would you rather…' question References philosophy References the PoI Makes another reference
Child	**What have you liked talking about?**	**Why do we go on the Slide?**	**Why do we go on the Climbing Frame?**	**Which philosophy question would you like to ask?**
Robert	The hamster food. I like going on the slide. I like going on the climbing frame	Because if you are at the top of the slide you are scared. If you're at the bottom of the slide you are brave	We carry on from each other and we get here every time	Would you like to be a dog or a cat? Would you like to be a lion or a tiger? Would you like to be a monkey or a hamster?
Emma	I liked talking about the hamster meat. I also liked talking about the only book we could read in Year 2	Because we're being brave and sharing our ideas in front of the whole class	Adding another idea to another idea. So we're trying to get to the top	What is the next piece of equipment?
Evan	Would you rather questions because it is fun	To show how brave we are	Someone said something, another person said something they go up	Any because I like all of them
Lizzie	The swing because I like it and I thought the hamster meat was (?) but it was a dead hamster	Because we can be nervous to say something	We can add other people's ideas	Would you rather be a horse or a lion?
Sarah`	I like talking about the would you rather question	When we are at the top we feel nervous and when we go down we feel excited		
Caleb	The Swing when you get to	Don't be scared of sharing your ideas.	Following on from what Freddie said I	Would you rather be a swimmer or a

	choose what side you're on	It's like you're on top of a big slide	agree and people keep it going	climber? Would you rather be a peregrine falcon or a cheeter?
Callum	When we said if we want to be rich or clever	So we can see if we are scared	To climb higher and higher	
Patrick	Would you rather questions because it was fun. I liked that we could ask people questions	When we are at the top of the slide we are really brave, when we are quite brave we are at the bottom		
Millie	The swing because I like answering questions	Because no is in the middle, yes is at the end, no is at the front	So we get 10 ticks	Would you be famous or rich
Beth	I liked the would you rather questions and when you did the ticks	Because if you're scared to talk you'll be at the top	Because we add our ideas together	How did you come to be a philosophy person?
Peter	Would you rather questions and the swing	To get more brave to share ideas on the slide	To follow on from what other people say and climb up the climbing frame	Would you rather be a cat or a dog? Why?
Jago	The swing and the seesaw and the book	If we are brave to say our idea to other people	To try to get higher by adding our ideas together	
Emily	The would you rather questions	To see if we are brave	To add on ideas	Would you rather be a (?) or a (?)
Philip	The question we last did	Be brave and share your ideas. Don't be scared of sharing your idea	Can I give more information to your idea?	Would you rather have a dog or a lifetime supply of sweets?
Becky	Would you rather questions	If you're nervous you go on the little slide	We go on it to get higher and higher	Would you rather play football with your friend or football with your friend and the team you support?
Jonathon	The swing, the slide and the climbing frame	To see if you're brave enough	To see if you can do something or not?	Would you rather have an (?) or have wings
Inez	I liked talking about the hamster meat, the would you rather, the how to train your dragon	To see if someone's brave or not	When one person says something, the other person says something following on	Would you rather be a rat or a fox? Would you rather be a hamster or a rabbit?
Sky	I liked talking about the hamster meat and going on the swing	If you're at the top of the slide you don't like talking in front of the class. If you're in the middle of the slide you don't mind talking but you still don't quite feel	Someone says an idea and the next person adds theirs	

		comfortable. If you're at the bottom of the slide you love talking in front of the class		
Finley	The swing and play equipment. I like in philosophy would you rather	You would be brave of saying your questions out loud in front of people	So we can get higher and higher	What play equipment are we doing next week
Lucy	The swing because I like answering questions and the hamster meat because I like talking about it	Because we can be nervous of saying something	We can add our ideas	Would you rather eat insects for the rest of your life or your dad does a naked dance in Tesco?
Rowan	I liked talking about the book	To find out how brave we are		
Chrissie	About the book because I love books and reading	Because it's high up and has a good view	To add our ideas and climb up high	How do you learn to do philosophy?
Jane	I loved play and talking about the would you rather questions because they're very interesting	Because if we're really nervous at the top then in the middle you might feel ok about talking	We go on the climbing frame because we can add on words like I agree. Sometimes it can be I disagree or following on	Would you rather live in a flat with a four poster bed or in a house that has lots of leaks
Henry	When we talked about being rich or clever. I think it's best to be clever	To be brave	To follow on	Would you rather

The analysis of the questionnaire resulted in four categories of understanding being applied to each question which asked about the children's understanding of an item of play equipment. These could then also be applied to the children's responses to the questionnaire in iteration 2b to be able to compare responses across research sites. The categories are shown in the table below:

Table 6.3. Levels of understanding of the Slide and Climbing Frame

Slide	**Climbing Frame**
Level of understanding (lowest to highest)	**Level of understanding (lowest to highest)**
1. No mention of being brave or talking	1.No mention of climbing up or adding ideas
2.Mentions being brave OR talking	2.Mentions adding on OR climbing up
3.Mentions being brave in connection with talking	3.Mentions adding on or climbing up in connection with sharing ideas
3+.Mentions the above and adds more details	3+.Mentions the above with specific reference to the top talking tips

6.4.5. Descriptive numerical analysis

Levels 3 and 3+ indicate that children have a good understanding of why either the slide or climbing frame is used, by providing sufficient detail to indicate that they connect the representations to the dialogic skills intended. Similarly, level 2 indicates that children have an understanding, but that their response lacks sufficient detail to be certain that they fully understand. The following table shows the number of comments in each category

Table 6.4. Numbers of comments which indicate understanding of the Slide and Climbing Frame

Level	Slide (no.)	Slide (%)	Climbing Frame (no.)	Climbing Frame (%)
1	2	9	2	10
2	9	41	5	24
3	10	45	10	48
3+	1	5	4	19
Total	22[4]	100	21	101[5]

The majority of the children understood what the Slide and the Climbing Frame represented (n=20/22 and n=19/21 respectively).

For the first question (What have you liked talking about?), the children's responses were divided into three categories:

- References a piece of Playground equipment (P)
- References a particular session question (S)
- References a 'Would you rather…' question (WR)

The question was deliberately phrased without reference to any specific aspect of the Playground of Ideas in order that the children could answer freely. It also allowed me to ascertain which aspects of the intervention were particularly memorable to them. A breakdown of the references in the comments showed an equal number of comments (n = 11) referring to each of the three areas coded.

[4] Total participants differ as one participant answered the Slide question but not the Climbing Frame

[5] % totals more than 100 due to rounding of figures

6.5. Findings

The data which were gathered were done so in order to answer the specific research questions for this iteration. Therefore the headings for this section correspond to those questions. The discussion section which follows considers these questions in light of the overarching research question.

6.5.1. Do Year 2 children understand the images that constitute the Playground of Idea as representative of the concepts they exemplify?

Excerpt from the group interview with six children and the researcher (LK)

> *Jane: Yes I like it because everybody has, they can actually, like I like the slide because sometimes I do get very nervous of talking so it kind of encourages me, um, cause I have stage fright sometimes.*
>
> *LK: Ok*
>
> *Jane: And it encourages me to talk*
>
> *Jonathon: Are you on the bottom slide then?*
>
> *Lucy: I think she's on the top because if you're on the bottom slide then you can just go down it like – boring*
>
> *LK: (to Jane) What do you think?*
>
> *Lucy: Cause the top bit's the scariest bit*
>
> *Jane: I think probably the top*

The exchange above is taken from the group interview (see Appendix 7 for the transcript). It indicates not only that a child (Jane) who was not confident about sharing her ideas is reassured by the Slide, but also how children's understanding can be enhanced through their interaction with one another. When Jane says that she is 'nervous of talking', Jonathon demonstrates misunderstanding by asking if Jane was on the 'bottom slide'. A number of children had this conception of the top slide was for if you were happy to talk and the smaller slides were or if you were not feeling brave. If this was an individual interview, then as the researcher-practitioner I would have corrected Jonathon, but in this case it is Lucy who steps in and corrects Jonathon. My contribution is quite limited in this exchange, and most of the talk is between the learners.

However, although the concept of being brave and going down the Slide when offering discussion contributions was understood, with 91% of respondents mentioning those aspects of the Slide, the image itself was a confusing one because it showed multiple slides, indicated in the image here:

Figure 6.2. Slide image used in the iteration

Six of the children's comments referred to being on a smaller slide if you're not feeling brave, and this misconception was also found in the exchange in the group interview, shown at the start of this section.

The Crowsnest (later called the Lookout Tower) was a late addition to the intervention, intended to provide children with a piece of play equipment which focussed them on other children's discussion approaches. This was first modelled by me as facilitator, commenting on what I had noticed, for example making comments such as 'I noticed that Jonathon was on the climbing frame, because he followed on from what Sky had said' or I saw that Sarah was on the slide today because she was brave and shared her ideas'. This was done at the end of the sessions in order not to disrupt the flow of the discussion. My impressions recorded at the time were that this allowed the children to focus on the quality of the discussion. The children very quickly emulated my modelling, commenting on the ways in which the others had contributed to the discussion by using a particular piece of play equipment. An example of this is below:

Lucy: I like the Crowsnest, I think I'm a bit cheeky because I look over and keep spying on Sky but also I like the seesaw because I like strong questions because my mind is thinking and I'm saying in my mind 'oh I didn't think of that and I'd better add something else on' and I'm thinking that the great philosophers must have been really good for that.

The class teacher also corroborated the finding that the children understood the meaning of and reasons for using the play equipment images, making a number of comments which indicated that the playground images were understood by the children. She identified that they provided a scaffold for the children as they "kept looking at them and trying to use them".

6.5.2. Are the sessions practically implementable in the classroom (e.g. timing of sessions, variation of activity, appropriateness of activity to age group, providing opportunity for discussion)?

To answer this research question, I primarily used data from the researcher reflective journal and the interview with the teacher. As was indicated in the 'hamster meat' example given in the 'Discussion questions' section following this, however, it is clear that 'what works' can be different from an adult and child perspective. Therefore I also triangulated the data from the reflective journal and the teacher interview with the children's group interview and questionnaire.

Discussion questions

In the questionnaire, the most frequent comment in the category regarding particular sessions referred to the 'hamster meat' session. This session gave the children a real tin of canned food, with a false label which read 'Tinned Hamster'. This was passed around the circle, and the children were asked if they would eat the hamster in a tin. My journal at the time records that I had not thought that this session had gone well – I thought it might be too provocative for them. The class teacher also particularly referenced the hamster meat session in her interview as one about which she was "really scared". It was a particularly interesting finding,

therefore, that it is the session which most of the children remembered when asked what they liked talking about. This revealed a discrepancy between the adults and the children's perceptions – the adults were less comfortable with this discussion topic than were the children.

In the questionnaire I asked the children 'Which philosophical question would you like to ask?' The responses to this were overwhelmingly concerned with the 'Would you rather…' questions. On reflection, this is not surprising as the children had primarily *themselves asked* 'Would you rather…' questions whereas they had *been asked* other questions. I considered that the issue was perhaps with the questionnaire, but as can be seen from the transcript of the group interview (Appendix 7), even when I was asking the children about another aspect of the PoI, they repeatedly returned to the 'Would you rather…' questions. Caleb's comment gives an indication of why these questions engaged the children: "I like would you rathers because when they say, when they ask you a question you have to think because you say 'because' and it makes you think more".

A theme which emerged from the children's comments is that some of the sessions were "hard" for them, but that this was a positive experience:

> *F: I like it when you stand, going on the swing – the play equipment, especially the swing because you get to think about, your brain gets to think about something that's really hard, like the Jack and the Beanstalk one, that was really hard.*
>
> *LK: That was a hard one? Was it all right that it was hard?*
>
> *F: Yeah*
>
> *L: Kind of because it gets your brain warmed up and it gets kind of, it's quite…you know like, it's like in maths…*
>
> *(excerpt from the group interview)*

Similarly, Caleb indicated that he enjoyed the 'Would you rather…?' questions because he got to think more and he linked this with saying 'because'. Implementing linguistic structures such as this were also seen as a positive feature of the intervention by the class teacher: "the sentence starters really, really helped them".

This was in reference to the ‘top talking tips’ which were devised during the iteration to accompany the climbing frame. These consisted of three sentence starters: I agree with…because…; I disagree with…because…; Following on from what…said, I think…’.

Practical implementation

The practical considerations of the intervention were adjusted as the sessions took place. The teacher allowed one hour per session, which proved to be enough time. This is longer than children would usually sit on the carpet, as the teacher remarked to me. However, children’s classroom ‘carpet time’ is usually for input sessions, where the teacher presents information about a unit of work. Children then carry out individual or small group work at their tables. During the Playground of Ideas sessions, however, children were engaged in discussion themselves rather than receiving input.

One child commented that she liked the “moving bits”, as a number of activities during the sessions involve physical movement from the children. For example, in the Swing sessions, children move from one side of the classroom to the other; children move to different ends of the Seesaw during those sessions; there are also ‘opinion line’ activities, where a strip of masking tape represents a continuum of opinions from ‘definitely yes’ at one end to ‘definitely no’ at the other. Children decide on their own response and choose a place on the line to stand, and then move along the line as others’ arguments change their opinions.

In discussion, the class teacher and I noted that there were some sessions in which the planned activities involved no movement, and that the children struggled to sit in a circle for the full hour during these sessions. Therefore in the revision to the sessions it will be ensured that each session incorporates an activity in which the children can move.

6.5.3. Are there any indications that participants (teacher and learners) are developing the skills and/or dispositions for dialogic thinking?

There was an indication that children were using the skills that they developed in the sessions to think about issues in other curriculum subjects. The children did not use the term dialogic thinking as their teacher had told them that they would be doing a 'philosophy' session, and so this is how they referred to the sessions. Before the last session, a group of the children came in from lunch and a number of them told about their science lesson. They had been growing vegetables in the school garden and they were asking about what had come first – the vegetable, or the seed from which it had grown. They were actively engaged in this inquiry, and very enthusiastic, identifying it as a philosophical question. From their comments, the basis on which they did so was that they identified it as a question to which they thought there might not be one answer, and that they had different ideas with good reasons for both sides. They had been discussing it among themselves over the lunch break before coming to me and asking what I thought. This indicates that they were beginning to identify the philosophical basis of other curriculum subjects, and beginning to engage in group discussion and inquiry about these questions even when there was no adult present to facilitate.

There were a number of instances throughout this iteration which indicated that the discussions the children were having in the sessions were unexpected to the class teacher. Many of the teacher's comments in the interview revealed that she had not considered the children as able to discuss these questions. However she also made a number of comments which indicated that the sessions were a transformative experience for her in the way that she viewed her class. For example, despite her view that the "questions seem quite grown up and challenging", she also expressed the view that she was "really surprised" and the children responded "really positively and quite maturely".

In addition to this, the class teacher indicated in her interview that she was also beginning to think about the ways in which philosophical questions can apply to other curriculum subjects:

CT: I was thinking about maybe how you could use the ones from fairy tales, you know, from books that they're reading, characters. We do Jack and the Beanstalk, I was thinking afterwards well actually there were some philosophy questions that could have come out of that. Should Jack have stolen the hen – Was it ok that Jack stole the golden hen?

(excerpt from interview with class teacher)

In one session which I was facilitating, children were asked the question 'Should we treat everyone the same?' The children's consensus was that everyone should be treated exactly the same. The teacher said to me after the children had finished their discussion

I really wanted to talk to them about China and Russia, but I realised that they wouldn't have that knowledge and I didn't want to interrupt their thinking by giving them historical examples that they know nothing about, they needed to think about it with their own understanding.

(recorded in reflective journal)

What is interesting about that example is that the teacher realised that she had concrete knowledge about the world that could have no bearing on the children's discussion because they were discussing it from their perspective and experience. In this case, an adult's lived experience of twentieth century communist politics would be intrusive on the children's experience of discussing that question.

Despite these apparently positive effects on the teacher's relationship with her students, what is revealing about these comments is her use of the terms "grown up" and "maturely". This seems to reinforce Murris' (2016) view that children are positioned as "deficient" by adults, and that mature adulthood is the ideal to be arrived at. This is reinforced by the teacher's response to the children's level of discussion as in line with their "developmental stage".

While these examples provide indications of dialogic thinking in terms of the changing ways that children and teachers are in relation with each other, this iteration did not include a means by which to give any greater insight into how

children were thinking dialogically, which would need to be addressed in a future iteration.

6.5.4. How can these materials be taught independently by trained teachers without researcher input?

During the interview, the class teacher offered a number of suggestions for how the Playground of Ideas could be presented to teachers as an independent resource. These are summarised from the transcript as:

- You might need to watch a video of a session.
- Making [the pictures] into an interactive whiteboard
- Going to a play park and actually, to do a little video clip of them…to almost model it, make it more dimensional

The teacher thought that "written resources can be interpreted in so many ways" and so watching a video of someone teaching a session would be a helpful suggestion, "like I've watched you teaching", as she added. She later added that part of this video could be of children visiting a play park and physically experiencing the play equipment. She thought that this would be useful for the children, so that they understand the concepts, and also could form part of a training resource for teachers. Following this conversation, I did take a small group of children to a play park and we practiced using the 'top talking tips' while the children climbed up the climbing frame as they offered contributions. However, it was clear that this was not a practical option for the class as a whole: there would be too many children, and the play equipment was too dispersed to have a coherent discussion.

Although I considered the suggestion to have the images on an interactive whiteboard instead of paper copies, I discounted this because the children often (as the class teacher said) engage in lesson input presented on the whiteboard, looking at that rather than at each other. The advantage of the paper copies is that they are contained within the circle and children can refer to them as they engage in discussion with each other.

Following the teacher's suggestions, I included her comments from the interview and other conversations, as well as the children's comments from the interview, into the revised resource pack. I inserted them at key junctures in the resource pack in order to provide concrete examples to other teachers of how these participants had engaged with the resources. I did this in lieu of making a video of the sessions, as I wanted to make a contained resource pack that did not require future participants to access further resources.

Examples of extracts from the revised resources including comments from participants:

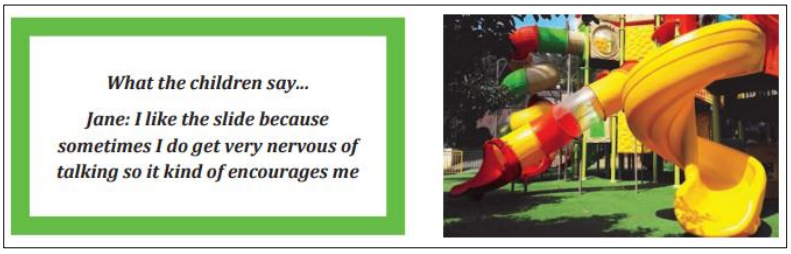


Figure 6.3. Child's comment illustrating her perspective of the Slide

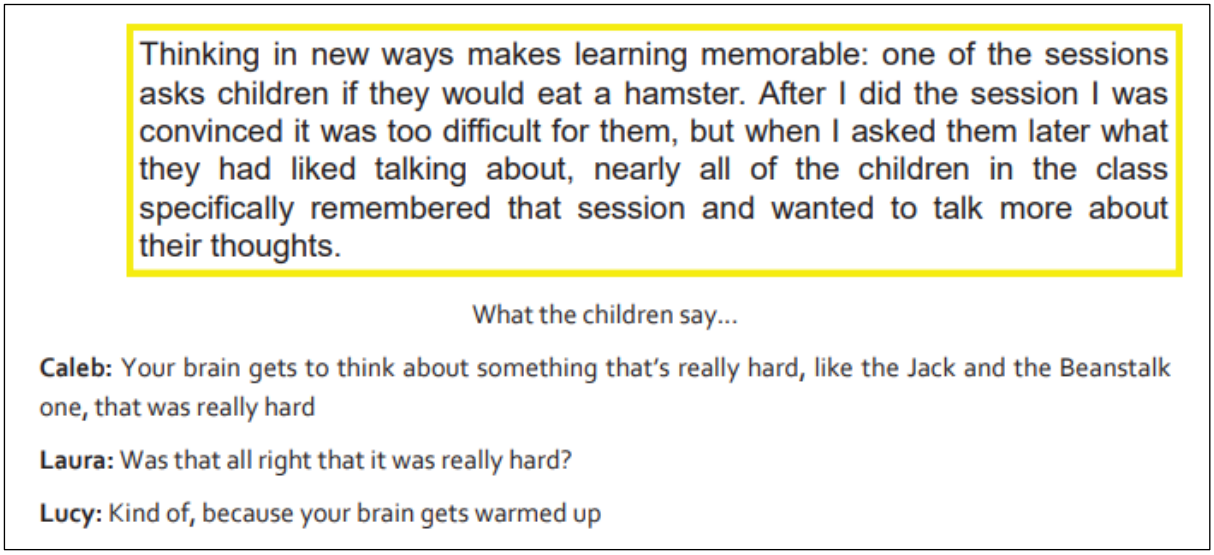


Figure 6.4. Explanation of discussion questions illustrating my perspective and the children's of challenging questions

The class teacher also indicated that she thought that the format of the session plans was suitable and useful; I provided her with a copy of the session plan before teaching the sessions so that she could write comments on it as I taught. She indicated that that the session plans themselves were useful as they included information for teachers, a step-by-step session plan, resources needed, and

suggestions for questions to stimulate discussion. Her notes were useful in rewriting the session plan to make language clearer and adding steps into the session plans. She also helped to revise the sections providing information for teachers on the philosophical background to the sessions. As she did not have a philosophical background, this was a necessary step to ensure that this information was accessible to other teachers without a philosophical background.

6.6. Discussion

This study has been designed so that each iteration, while answering questions specific to that iteration, answers the overarching research question for the study. This question is:

How can a teaching-and-learning intervention support primary age children of six- and seven-years old in England to begin to demonstrate dialogic thinking in whole-class and small group contexts?

The following discussion considers the ways in which the findings inform this overarching question by considering the aspects of the findings that indicate how the Playground of Ideas intervention can be developed and refined further to answer the research question.

6.6.1. Indications of the need for argumentation language in dialogic thinking

There is previous comment on argumentation in the literature review which indicated that there were aspects of argumentation which considered together with dialogic theory could provide a model of dialogic thinking. Relating this with the findings from this iteration, there are two key points which relate to this study.

The first is that inquiry learning, such as Philosophy with Children, does not imply that all claims are equal. The description of philosophy (which seems through experience to be the default description given by many teachers) as a subject in which there are ‘no right or wrong answers’ can lead to children believing that

anything they say is as relevant as anything else said by others. Walton (1989) included inquiry as a category in his classification of types of dialogue, stating that the initial situation is “lack of proof”, and the goal of the inquiry is to “establish proof” through “knowledge-based argumentation” (p. 10). However, this is less helpful when the inquiry is not into something which is already known, but is an open-ended one. What is needed is to establish how claims can be responded to when the outcome is *not* known. In this sense, Philosophy with Children is a good ‘training ground’ for argumentation techniques because while teachers are right in that there are no right or wrong answers (adding the caveat of ‘no easily identified’), there are better or worse arguments to be made, and children can practice making these arguments outside of subject-specific disciplines.

The second point of relevance is that this study is based in dialogue, as are Communities of Inquiry and Philosophy with Children more generally. This is dialogue in the sense of ‘having a discussion’, but to be true dialogue in Wegerif’s sense, a consideration of dialogue as a social ontology and an epistemological framework should be taken into account. Schwarz and Baker (2017) make a compelling case that the dialogic (in Wegerif’s sense) is not incompatible with argumentation. Instead they claim that in understanding argumentation in relation to learning “a theory of dialogue is required – one that takes account of both discourse and structure” (p. 68). Their theory of dialogue is one in which the dialectic (the means of handling disagreement) and the dialogic (multi-voicedness) are combined.

Buber’s (1965) conception of dialogue is not contrary to this as for him, the I-Thou relationship is not grounded in agreement. A person can “accept and confirm the Other, even in the severest of conflict” (p. 123). The key to a dialogic relationship is not to subsume the Other into one’s own perspective, allowing for the ‘gap’ which keeps consciousnesses autonomous. Disagreement itself, however, is not a barrier, although perhaps the means of resolution of that disagreement is.

For example, Schwarz and de Groot (2007) raise the issue of ethical communication in argumentation, where participants in a dialogue take into account the flawed reasoning of others, or simply have an alternative perspective. The question of how this should be approached by learners is an important one, where

learners may have no techniques in their repertoire for taking part in argumentative dialogue.

This was seen in the Climbing Frame sessions, where children could not climb further up because they had no knowledge of how to do so. Following this iteration, The Playground of Ideas intervention incorporated strategies for introducing basic argumentation techniques into discussion:

- The 'Would you rather…' warm up activities incorporate giving an opinion with an expectation that the reason will be justified. This introduces a sentence structure of 'I think……because…….'. At this stage, there is no expectation of counter-claim; others can give a different opinion and justification, but the questions are structured so that any opinion given can be seen as valid.
- The Climbing Frame is used in conjunction with the 'Top Talking Tips' in order to provide children with a vocabulary to support or counter a claim, as well as to provide a mechanism for substantiating a claim more fully. Therefore children are able to climb up the climbing frame by using the following strategies about others claims:

  I agree with…..because….

  I disagree with….because…..

  Following on from……I think……

- The Climbing Frame is followed by the Seesaw, in which children are introduced to the idea that not all reasons are equal. Children were asked to examine the justification of claims and to identify poor justifications. This started with exaggerated extremes of justifications, such as the justifications of not going to school because one is sick, or because one wanted to watch TV, and then became more subtle.

6.6.2. Indications of a need for a broad consideration of dialogue

One of the guiding principles for the intervention was to be able to foster dialogic thinking skills and dispositions in all children, or as many children as possible, in a

classroom setting. In any given classroom, this will include children with a range of previous experiences of and competencies with using language, as well as natural or learned differences in their inclination to express themselves in a group setting. In any dialogue, “account has to be taken of members’ relative status and power” (Littleton *et al*, 2010, p.170).

This was borne out in this iteration, in which some children were more vocal from the outset and throughout. One of the key challenges for an intervention of this type is how to break these patterns of discourse, in reference to verbal dialogue. The challenge is how to encourage children who tend not to engage in verbal dialogue to do so, while encouraging those who do engage to make space for others to do so. The way that the Playground of Ideas attempted to meet this challenge was by conceptualising dialogue as broader than the spoken, as others have done. For example, Wegerif (2019) refers to strategies to accomplish this as ways to “expand dialogic space” (p. 21). Although Buber does claim that language is the medium of dialogic interaction, he also acknowledges that wordless interactions: a glance or sitting side by side, can also invoke an I-Thou relationship in which people ‘just know’ that they are in mutual dialogue.

The aim of this intervention is to develop dialogic thinking skills and dispositions, and the further aim is that children will use spoken dialogue in the ways in which a good deal of research has shown are productive in peer interaction (Howe, Mercer and Hennessy, 2020; Alexander, 2004; Michaels, O’Connor and Resnick, 2008). However, the research question for this thesis examines the ways in which children can *begin* to develop those skills. As Wegerif (2019) writes: “opening a dialogic space begins with a relationship” (p. 21).

For this reason, the intervention begins with the Swing, in which children can physically move to show their thinking. As children begin to justify their position, other children can freely move to show changes in their thinking as a result. In the children’s question, in response to the question ‘What have you liked talking about?’, 9 of the 11 responses which referred to a particular image of play equipment referred to the Swing, indicating that it was a popular activity. The class teacher and I both remarked on the children’s obvious engagement with it, which is why we decided not to ask about it specifically when designing the questionnaire.

This engagement, in the sense of opening dialogic space, could be because children are able to show their thinking where they do not verbalise it. What is key is that it is a public showing, in which the rest of the class could see each other's thinking and come to realise that those children who do not offer their verbal dialogue are still participating in dialogue and have views of their own which are being expressed in this way. The dialogue is shared because physical movement is a response to the verbal and children can see the impact of their verbal contributions on the thinking of others. Changing one's mind on the basis of what another has said is a way of acknowledging that the other voice is one to be listened to, and so this practice affirms the dispositions of dialogue.

Expanding the dialogic space in this way is an attempt to mitigate the variances in spoken dialogue that will be found in any classroom. In considering the ways in which children begin to think dialogically, it focuses on dispositions rather than skills, while also providing a model of those skills, such as being able to verbally articulate one's reasoning (which some children might already possess). Therefore children are inducted into the interplay between their own thinking and that of others as they begin to engage in dialogic thinking.

6.7. Design review

This section provides a review of the design following this iteration in readiness for the following one, in accordance with the principles of a DBR approach. The methods for this iteration are reviewed, followed by the ways in which the intervention was revised in response to the findings. Finally, the design principles are added to in order to produce a set of working design principles which can be taken forward to the next iteration.

6.7.1. A review of research methods

For each iteration, the research methods employed for a DBR approach were also under review (as indicated in the Design Framework, section 1.4). The research question was answered in this iteration through the research methods cited, but one

of the most useful approaches during this iteration was the researcher reflective journal. Working in a classroom environment meant that there was not always the time or space to have a lengthy interview before or after sessions. So the teacher and I had more informal talks, sometimes of just a few minutes duration, and I recorded these in the research journal. When the children asked about whether the vegetable or the seed had come first, this was not an event which could have been planned for, but I recorded it in the journal. In this respect, taking such an immersive approach to the iteration, spending time with the children and facilitating their discussions allowed me to form a greater overall impression of the ways in which the Playground of Ideas was impacting on the children. This accords with Kelly's view of DBR researchers as "research impressionists" (2004, p.115).

This immersion also seemed to be a necessary step in creating a stand-alone resource which could be used for the next iteration. As a qualified but inexperienced primary teacher, teaching these sessions gave me an indication of what it was like to engage with the unfamiliar, and by considering what I needed to be able to teach this intervention gave me a first-hand experience of what others would need to be able to teach it.

6.7.2. Indications of dialogic interaction in the research methods

This section draws attention to dialogic interaction specifically within the research context. It highlights some issues with carrying out research which is intended to be dialogic in nature within a classroom context when the co-researcher is a professional teacher.

Harre and Langenhove (1999) refer to "positioning" as a situation in which cultural discourses repeatedly refer to, or 'position' groups of people in certain ways, which precludes engagement in true dialogue. In the case of teachers, previous literature has identified the prevailing discourse as one in which teachers are powerless, lacking professional freedom and subjugated to policy demands (e.g. Ball, 2003). This, of course, is not to say that all teachers experience this, but rather that this is the dominant discourse of referring to the teaching profession and the teachers

within it. Therefore if teachers do not have the freedom for their words to be shaped rather than determined by their professional position then dialogicity is an illusion.

In Bakhtinian terms, the assertion that ‘I am a teacher’ therefore also becomes problematic as the word ‘teacher’ is required to stand for a particular performative institutional identity (Bernstein, 2000), which surpasses the ‘I’. In a dialogic sense, Holquist (1990) points to the special position of the pronoun ‘I’ in that "I is a word that has no referent" (p. 22). Instead, if the utterances of the ‘I’ are to be dialogic then the ‘I’ must be able to be able to be change and to be different at different times and in different contexts. This also accords with the Buberian sense of the ‘I’, which, as for Bakhtin, is a word with no referent other than that of either an I-It or I-Thou relationship. However, given Ball’s and others’ arguments referenced here, the pronoun ‘I’ becomes a noun, so associated with ‘teacher’ as to deny dialogic possibilities of becoming through the dialogue. To use Bakhtin’s term, the teacher as a professional identity has been ‘finalised’ before the conversation even begins.

Therefore if teacher’s language is constrained by the performative system in which he or she is located, then the language becomes wholly that of the education system rather than an ‘I’, and so in terms of the research interview, one might expect that this could have an effect on the data gathered. This is particularly the case in the qualitative semi-structured interview in which it is a commonality that the interview is a situation in which knowledge and meaning are constructed between the interviewer and the respondent (Holstein and Gubrium, 1998; Kvale, 2007; Denzin, 2001). Positioning theory indicates that this might be constrained if the teacher’s identity is subsumed to a problematized professional one.

However, there were times when I felt that when we were discussing the changes to the Playground of Ideas that we were exploring the topic together and there was no obvious divide in our roles. There are a number of instances in the interview data where the teacher is making suggestions about the direction of the PoI, in response to my statements that I want suggestions from her in her capacity as a professional to be able to take the intervention to other schools. At these times, she is very willing to offer (very helpful) suggestions: “Do you know what I think? You might need to watch a video of a session”; “I think you can’t underestimate with little ones how much they need that”; she also said “I was thinking about going to a play park to do a

little video of them"; "to almost model it". She is using her experiences as a professional and I am taking the role of less experienced practitioner.

In this respect, the situated, practical nature of DBR here provided a means by which the teacher and I could meet on equitable terms. Taking the role of practitioner myself, and asking the teacher to observe was a very successful strategy. To use Buber's terminology, this approach allowed us to 'swing into the life of the other' and to develop the Playground of Ideas by combining our expertise.

Yet while the nature of DBR as a methodology in which research is collaborative was a strength here, it was also evident that Buber's assertion that swinging into the life of the other necessarily means swinging out again. It was interesting to note that the open conversation could be reversed with a comment: when I said "most teachers won't have much philosophy background", implying that I need to scaffold the intervention for them and their lack of experience, and positioning myself back as a researcher, the teacher's next comment is "If you gave me that first question, I would definitely get stuck". This is despite the fact that in her role as experienced practitioner she suggests using the class's literacy work as a stimulus for philosophy sessions, including offering example of philosophical questions such as "Was it ok that Jack stole the golden hen".

In this case, this is not an example of positioning (or finalising) as the interview as a whole shows a number of instances where expertise and experience are deployed and deferred to from both parties. However these roles are not fixed and so indicate that the interview was a dialogic experience in that we were both considering the other as knowing, autonomous beings with whom to dialogue, and neither of us held our beliefs as so fixed as to preclude challenge or revision. Therefore the approach the semi-structured interview in collaborative research with education practitioners would seem to offer the flexibility of maintaining dialogue whilst still having the focus to illuminate the research question.

6.7.3. Revision of the Intervention

In the research design, I had thought that I would teach all of the sessions and then make revisions following the completion of the intervention to be re-trialled.

However, in practice, the experience was not so formally delineated. As I was teaching the sessions, my own experiences of the practice, as well as conversations with the class teacher who was observing me, led to revisions of the intervention as the sessions were taking place. There were two particular changes which needed to be made while the iteration was on-going.

The initial intervention included The Roundabout as a way of identifying when the discussion had stagnated (going round and round) and some new input or perspective was needed. However, the teaching of this session was not very successful. It proved to be quite disruptive to the sessions, and the discussion that children were having. As a result, I did not use The Roundabout for any further sessions. It might be that this is an element of dialogic thinking which is best introduced when children have had greater experience of this kind of activity. It was replaced by the Crowsnest, as it was called during the intervention, but was later renamed the Lookout Tower because I thought that it was a more descriptive term for what was occurring when children were using this piece of equipment.

Figure 6.5. The Lookout Tower

The purpose of the Lookout Tower was for children to be able to identify the nature of others' contributions to the discussion. This allows for language modelling by members of the group to be brought to the attention of others in the group by peers and the teacher. This was intended to be used at the end of the sessions; as

the Roundabout had demonstrated, breaking off from discussion to engage in reflection on the quality of discussion was not a successful strategy at this stage because it was too much of a cognitive load for children.

The table below shows the other revisions which were made to the intervention during the iteration and as a result of the findings.

Table 6.5. The revision of the intervention

Equipment name	Review of sessions with comments synthesised from researcher reflective journal, comments from leaners and comments from teacher	Revisions to be made
Swing	I felt that the learners intuitively got the idea of the swing. It helped considerably that it was initially presented with questions which were quite simple and not examples of philosophical (i.e. conceptually difficult) questions which generally took a 'Would you rather…' format. I tried the swing with the children moving from one side of the classroom to the other, or just pointing from one side to the other. With good behaviour management, it was better to have them move. They preferred being physically active, and when they changed their minds and went from one side to the other it was easier to see their thinking.	No amendments were made to the swing as an image. Changes were made to some of the lesson plans which use the swing as it is a good starter activity to get the learners focussed on the question.
Slide	The children did not always relate to this image. While they grasped the idea of going down the slide because you were feeling brave, their comments show that they did not always equate this with their thinking. In addition, some of the children thought that if you were at the top of the slide you were feeling brave, if you were in the middle you were a bit brave and if you were at the bottom you were not feeling brave at all. In one session, where I took three children to a real playground, one of them tried to indicate he was feeling a bit brave by stopping half way down the slide.	While the teacher's comments were that it was an effective image that got the children's attention, the picture with multiple slides was confusing for the children. Therefore, in the Teachers' Handbook and the session plans I will change the image of the slide to one which only has one slide in the picture. I also added an extra session to the plans

		which was intended to function as a way for the learners to give their opinion on the most suitable images to use. In the final session the children work in groups to choose between many different images of the same piece of equipment so that they can decide which image most effectively represents the talking skills they are practicing.
Climbing frame	When I initially trialled this session, I did so without the use of the 'top talking tips' which I later added in. The first session on the climbing frame was not very successful because although the children got the idea of getting higher on the climbing frame in order to build on others' ideas, they did not know how to do this in terms of their language skills. I introduced the 'top talking tips' in the second session which included: Following on from what X said, I think that I agree with X because I disagree with X because	The Climbing Frame has already been revised during the course of the pilot work to include the 'top talking tips'. The climbing frame image stayed the same between the first and second iterations, but the session plans were adapted to include the top talking tips.
The Seesaw	This was trialled in two sessions, which had quite different results. In the first session, the question asked the children to evaluate different reasons for missing school. In the second session, the question encouraged much more polarisation and defence of one's own position. This did not result in a community of inquiry but rather a debate, and was indicative of Hayes (2015) criticism of critical thinking pedagogies as promoting combative discussion	While the seesaw image stayed the same, I changed the session plans to ensure that the questions were of a type where children did not have to compete against each other
The Roundabout	I discarded this piece of equipment early on during the pilot work because I felt it did not express exactly what I wanted it too. It was replaced with the Crowsnest (below). The original aim of the Roundabout was for the children to notice when the discussion was becoming repetitive. But I realised it would be	Replaced with the Crowsnest

	difficult to introduce without interrupting the flow of the sessions and their thinking	
Crowsnest	This piece of equipment was very effective in promoting a meta-thinking approach. Children focussed on the thinking of others and how that related to their own questions. It also functioned well as a plenary device for the close of the sessions as it brought the focus back to the playground equipment. It exemplified the CPI premise of a combination of individuality and community. It drew the children's attention to others' thinking and how that impacted on the group and affected their own thinking.	The Crowsnest was already part of the revision that occurred during work in this iteration as it replaced the roundabout. For the next iteration, I will keep the Crowsnest as it is and revise some of the session plans to make sure it functions as a plenary, but change the name to Lookout Tower as it is a name more indicative of nature of the equipment.

6.7.4. Refining the design principles

The three principles which were identified as at the intersections of Critical thinking, Dialogue and Philosophy with Children are presented first in bold. The principles which were added subsequently, identified during the exploratory study (Chapter 4) are given the number 1. The principles which were added as a result of this iteration have been given the number 2a. This provides an indication of how each iteration adds to the design principles for this study.

A teaching and learning intervention to develop the dialogic thinking abilities of six- and seven-year-old children should:

- **Develop relational dispositions for critical thinking as a collaborative activity**
- **Promote argumentation language in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

1) be easily accessible to teachers in terms of the content and the format in which it is presented. If this can be done with no need for additional training then this would be of benefit to individual teachers.

2a) encourage teachers to also consider themselves as learners

2a) provide opportunities to link to other curriculum content

1) take the form of a coherent strategy

2a) incorporate argumentation techniques

2a) provide strategies for language modelling

1) consider ways in which all students could engage in dialogue

2a) provide an explicit strategy by which children are encouraged to share their ideas

2a) provide opportunities for non-verbal dialogue

1) incorporate open-ended inquiry discussion

2a) involve physical movement as a discussion technique

2a) provide inquiries which children experience as challenging

There has been a greater focus on argumentation, with iteration 2a providing indications that the language of argumentation is helpful for providing structure for young children to develop dialogic thinking. One of the high level design principles has been amended to reflect a greater focus on argumentation rather than philosophising. A rationale for this is given later in this section. It was also clear from this iteration that children require explicit modelling of argumentation to use it as part of their discussions. Therefore additional principles relating to argumentation have been added. One of the principles was that a teaching and learning intervention to develop the dialogic thinking ability of six and seven year olds should develop the process of philosophising in order to discern the quality of arguments through dialogue. Although Martens (2013), for example, provides a structure of philosophising: phenomenology (looking); hermeneutics (understanding); analysis (deepening); dialectics (back and forth) and speculation (imagining) – this is not so

well delineated as argumentation, which offers more concrete means by which to achieve the dialectic element of dialogic thinking in particular.

In fact, Bakker (2018) proposes that Toulmin's argumentation schemas can provide a quality measure in DBR because they show how and why aspects of a research project are revised. He sets out schema for several different research stages in DBR, from conjecture mapping to randomised control trials. In this instance, I propose a schema for the decision to modify the design principle:

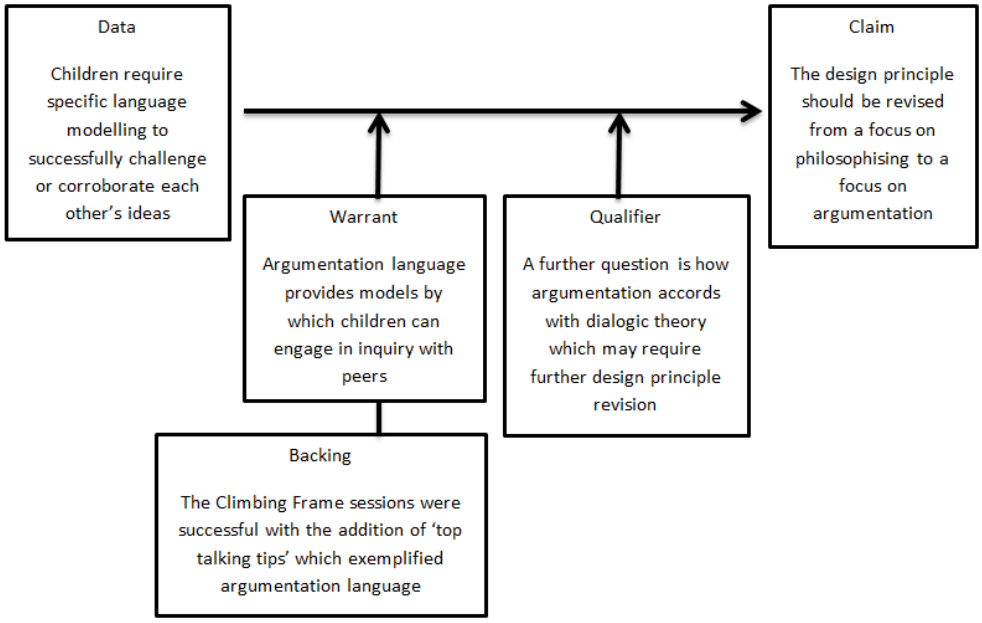


Figure 6.6. Argumentative schema for revision of design principles

Therefore the design principle that the intervention should 'Develop the process of philosophising in order to discern the quality of arguments through dialogue' has been reformulated as 'Promote argumentation language in order to discern the quality of arguments through dialogue'.

6.7.5. Design Framework 3

A teaching and learning intervention to develop the dialogic thinking abilities of six- and seven-year-old children should:

- **Develop relational dispositions for critical thinking as a collaborative activity**

- **Promote argumentation language in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

1) be easily accessible to teachers in terms of the content and the format in which it is presented. If this can be done with no need for additional training then this would be of benefit to individual teachers.

2a) encourage teachers to also consider themselves as learners

2a) provide opportunities to link to other curriculum content

1) take the form of a coherent strategy

2a) incorporate argumentation techniques

2a) provide strategies for language modelling

1) consider ways in which all students could engage in dialogue

2a) provide an explicit strategy by which children are encouraged to share their ideas

2a) provide opportunities for non-verbal dialogue

1) incorporate open-ended inquiry discussion

2a) involve physical movement as a discussion technique

2a) provide inquiries which children experience as challenging

Chapter 7. Iteration 2b: Trial of intervention in extended contexts

7.1. Rationale for the study and research questions

The exploratory study and previous iteration have generated a number of design principles. However, one of the principles was not adequately researched during iteration 2a because of the way in which it was delivered. The focus of this iteration is therefore the principle that the intervention should:

1) be easily accessible to teachers in terms of the content and the format in which it is presented. If this can be done with no need for additional training then this would be of benefit to individual teachers.

2a) encourage teachers to also consider themselves as learners

In contrast to the previous iteration, in which I took the role of researcher-practitioner, in this iteration I was specifically interested in whether or not I had produced a resource pack which could be used a resource which stood alone from researcher (or specialist philosophy teacher) input. This was a key step before the next iteration, as to carry out any testing of the effectiveness of the iteration first required ascertaining if the teachers could deliver the intervention successfully, meaning that the children had a similar engagement with the Playground of Ideas when it was taught by class teachers, and that teachers could maintain fidelity to the research design.

The second reason for conducting an iteration which trials the PoI in other contexts is that this is desirable, but often a shortcoming of, DBR practice. Kelly, Baek and Lesh (2008) write that DBR is not for "promoting and developing educational innovations" (p. 6) because this end in isolation gives no affordance to the reasons why a particular design is being undertaken – or the answer to the 'why' question would produce a context-specific closed loop, in which the intervention would be deemed successful once it has fulfilled local criteria (Middleton *et al,* 2008). Instead, not only is one aim of the design to work across contexts, but there is also an overt consideration of the ways in which the theoretical basis of the intervention and, by extension, broader theories of learning and education, are implemented.

Therefore this iteration aimed to transcend the local context to ascertain whether the basis of the development of Playground of Ideas was applicable in the broader education practice field. The research questions for this iteration are:

1. Can the Playground of Ideas resource pack be used successfully by primary teachers outside of a local context
   a) Does the Playground of Ideas have an impact on teaching practice?
2. Do children have a comparable conceptual understanding of the Playground of Ideas when it was taught by a non-specialist teacher?

7.1.2. How the iteration was conducted

Revisions were made to the resource pack in line with the findings from the pilot iteration, and then printed and packaged as a complete resource pack comprising a teacher's handbook, photocopies of material for classroom displays and other resources which were to be used in the sessions. An image of the materials in the final resource pack can be seen below:

Figure 7.1. Image of the Playground of Ideas resource pack

7.2. Sampling

The participants were recruited through social media. I advertised on Facebook groups aimed specifically at Key Stage 1 or Year 2 primary school teachers in the

UK. Teachers were asked to email to express their interest and I then provided more information about what the research project would entail. Following this I sent resource packs along with ethics forms and information posters to be shared with the classes of those teachers who chose to take part. They were informed that after they had taught the sessions they and the children would be asked to complete a questionnaire.

This method of participant recruitment was chosen in order to facilitate a 'light touch' approach to the research in this iteration in order that the presence of a researcher would not influence the teachers' practice. One of the research aims was to ascertain if the resource pack was useable without the need for specialist input or training beyond the standard teacher training which these teachers would have as state school teachers. Recruiting participants in this way had advantages and drawbacks. There was a great deal of teacher interest in the resources, and within a day of the social media advertisement I had over 80 responses from a broad geographical spread of schools across the UK. This fulfilled one of the aims of this iteration to include a broad spread of teachers who were unknown to me personally and who represented a number of different locations. The research was focused on England, and so I discounted responses from other UK nations.

Resource packs were sent to 32 of these respondents, and these were selected in terms of their previous experience of teaching PwC, which was information they were asked to provide when responding to the social media advertisement. The respondents were divided into two categories: those who had experience of PwC and those who did not. They were then further divided into two geographical categories, North and South of England. Then equal numbers of participants were selected at random from these four categories. 16 resource packs were sent to teachers who had no experience of teaching PwC, and 16 to those who did have experience.

This was done in the summer holidays in preparation for the start of the autumn term. However, not all of those to whom the resources were sent responded to subsequent emails or completed the questionnaire at the end of the sessions. Eight Year 2 classes and their teachers completed the sessions and responded to the questionnaire. I then accessed publicly available information about these schools

from the Ofsted website[6] in order to provide more details about each school. These are detailed in the table below:

Table 7.1. Details of schools participating in iteration 2b

School code name	Type of school	Location	Additional details	Number of child participants
Ashdown	State	North west, urban		25
Oakton	State	Midlands, urban	Above average EAL, above average pupil premium	27
Beechwood	State	North east, rural		25
Hawthorn	State	North east, rural		25
Yewtree	State	East Anglia, rural		27
Pine Road	State	South, urban	Above average pupil premium	26
Willowdean	State	South, urban	Above average pupil premium	21
Hazelmore	State	South, urban		23
			Total	199

7.3. Ethics

The teachers completed a consent form before they began to teach the intervention. A consent form was also sent to the teachers to give to their classes (Appendix 4). I asked the teachers if they wanted to use opt-in or opt-out consent forms, depending on the school's policy, and all chose the opt-out form.

Anonymity and data storage remained the same as for the previous iteration (Section 6.2).

7.4. Research methods and methodologies

This iteration was intended to have a broad geographical spread, and to be delivered entirely by teachers with no researcher input so that the class teachers themselves were entirely responsible for delivering the intervention. Although in the end there were fewer numbers of participating schools taking part, the iteration was

[6] https://reports.ofsted.gov.uk/

designed to carry out research with a large number of schools in a large number of places. This made research-intensive methods such as interviewing or observations difficult to administer.

The teachers were to teach all of the Playground of Ideas sessions as part of their classroom practice. The children and the teacher were asked to complete a questionnaire post-intervention. The children's questionnaire was the same as for the children in the previous case study in order to compare the children's perceptions of the PoI across contexts, and was administered by teachers to their classes, an approach described as a group-administered survey (Denscombe, 2010, p. 16). This is a strategy which also overcomes the low response rate which is characteristic of surveys.

The teachers' questionnaire incorporated both open-ended and closed-ended questions which used a 10-point Likert scale. The questionnaire was developed following a synthesis of the information previously collected in the data from iteration 1 together with the research questions. This enabled me to consider what I wanted to find out and why. In a medical education context, Artino, Rochelle, Dezee and Gehlbach (2014) identify that there are many ways to define a survey, but these are not always well delineated so that reliability and validity can be an issue. In the interest of research rigour, I attempt to address the issue in the context of this study in the following paragraphs.

In order to ascertain if the Playground of Ides can be applied outside of the local context in which it was first trialled, the only measure of success was the comparison to iteration 2a. The Playground of Ideas is a new intervention and so there is no metric available for the construct of what 'successful' teaching of it looked like. While there are measures that can be put in place to ensure that validation is an ongoing and indefinite process in a context such as this (Messick, 1995), the claims that can be made from this survey are pragmatic ones which pertain to the development of this intervention rather than making strong claims in a broader context. However, this is an inevitable consequence of DBR, in which some iterations are more 'important' than others in respect to the wider research community (Bakker, 2018, p. 138). When an iteration (such as 2a and 2b) is focussed on making improvements to the design (DESIGN-based research) then, Bakker suggests, detailed procedures such

as verbatim transcripts are not required. Wegerif (2007) states that “validity and reliability…exist within dialogues and those dialogues are always relevant to a perspective” (p. 19). These perspectives indicate that generating a survey for teachers in this extended context can be done by comparison with the local context, effectively establishing a dialogue between the two.

In order to ensure internal reliability, I first considered how to isolate the components of the intervention in order to find out the teachers’ perspectives on different aspects of it. I drew on the codes and themes defined in the analysis of the first iteration. The codes were used as well as the themes in order to ask questions based on the units of code rather than relying entirely on the themes that were identified. Therefore in the analysis I can map the codes onto the themes that were identified in the first iteration to provide an additional layer of comparison between iterations. These are detailed in the table below:

Table 7.2. Themes and codes used to create the teachers’ questionnaire for iteration 2b

Codes	**Themes**
Swing (Sw)	Quality of discussion (QD)
Slide (Sl)	Teacher perspective of children’s experience (TPC)
Climbing Frame (CF)	Enjoyment (E)
Seesaw (Se)	Playground Images (PI)
Lookout Tower (LT)	Teacher professional view (TPV)
‘Would you rather…’ game (WYR)	
Discussion questions (DQ)	
Wider curriculum (WC)	
Children’s competence (CC)	

This resulted in a three part questionnaire. Part 1 comprised practical questions about the teachers’ background and experience; part two asked questions about the different components of the intervention. The language used was less of a challenge than it could have been because I knew that all of the participants were professionals. It is where participants may have low levels of education that the reliability of data from poorly-worded questionnaires is most problematic (Krosnick, 1999). Nevertheless, I asked three teachers from a primary school in which I had previously worked to read through the questions; I also sent a copy to the teacher of iteration 1, and asked her to complete the relevant sections. As she was an observer

and not a teacher of the sessions I did not use any of the data from her responses, but they indicated that the questions were formulated appropriately. The table below shows the final schedule for the survey, and the letter in brackets relates to the code or theme from which the question was drawn.

Table 7.3. The questionnaire design for iteration 2b.

Question	Code/Theme
Part 1: Background questions	
How many years have you been teaching in a primary school?	n/a
Have you ever taught Philosophy with Children before?	n/a
Did you complete all 10 Playground of Ideas sessions?	n/a
Did you complete the 10 sessions in 10 weeks (apart from school holidays)? If not, please could you say why	n/a
If you already do philosophy for children (P4C), or have done it before, please could you tell me how the Playground of Ideas compares to other resources you have used?	n/a
Part 2: About the Playground of Ideas	
What did you think of:	TPV
a) The images of playground equipment	PI
b) The questions for discussion	DQ
c) The 'Would you rather…?' warm up game	WYR
What do you think the children thought of:	TPC
d) The images of playground equipment	PI
e) The questions for discussion	DQ
f) The 'Would you rather…?' warm up game	WYR
Do you think that the children's discussion skills changed as a result of the Playground of Ideas sessions? In what way?	TPV
What did you think about the quality of the children's discussion?	QD
Did you enjoy teaching the Playground of Ideas sessions?	E
Did the discussions from the Playground of Ideas have any impact outside of the Playground of Ideas sessions? Please give some detail.	WC
Can you think of 2 or 3 children in your class for whom the Playground of Ideas made a particular impression (in any way)?	TPC
Is there one session in which the children's discussion really stood out for you? Which session and why?	QD
What would you change about the Playground of Ideas resources?	TPV
What advice would you give to teachers who are about to teach the Playground of Ideas?	TPV

The third part of the survey consisted of Likert Scale questions, as below:

Part 3: Likert Scale questions

Below are a series of statements about the aims of the Playground of Ideas resources. Please could you circle a number to indicate how much you agree or disagree.

1. The sessions helped the children to listen more to each other
2. The sessions helped the children to express their ideas more confidently
3. The sessions helped the children to give reasons for their ideas
4. The sessions helped the children to think about the weight of their reasons

The Part 3 questions were drawn from the development of the intervention section, in which the dialogic competencies were defined according to the literature. These questions were suitable for inclusion as closed questions because I was working from a hypothesis that these were key dialogic thinking skills and dispositions and the aim was to discover to what extent teachers agreed that children were demonstrating these through the use of the intervention. However, I also added a box for teachers' comments after each of these questions. As the statements asked respondents to indicate their agreement with the statements, I used a 10-point Likert Scale to avoid the problem that "agree-disagree response options are bipolar" and "respondents may feel as though they simply do not have enough choices to accurately represent where they lie on the continuum" (Gehlbach, 2015, p. 887). This is particularly the case where the options given are in the range of strongly agree to strongly disagree because what constitutes strongly may differ between participants. Having a 10 point Likert Scale gives participants more choice and therefore indicates more reliable data.

7.5. Analysis

The children's questionnaires were analysed using the framework that was generated during the pilot iteration. The participants' answers were coded according to this framework, and then mapped onto the same levels as the participants from

the previous iteration. The responses from this iteration essentially form part of the same data set as the last iteration, and the same codes that were applied there are applied here. If those codes and themes are not applicable here and there must be considerable generation of new ones, this would indicate that the children who took part in this iteration have engaged with the Playground of Ideas in quite a different way.

The teachers' questionnaire was analysed thematically, as in the previous iteration. However the approach taken was different in focus; Braun and Clarke (2006) highlight that there are two approaches to thematic analysis: a top-down one which is driven by the research questions, and a bottom up one which is driven by the data itself. Unlike the thematic analysis which occurred in the previous iteration, which was driven by the data itself, in this iteration, the thematic analysis was driven by the research questions. This was because in the previous iteration I did not know how the children, or the teacher, would engage with the Playground of Ideas, and so I used the information contained in the data to answer a much more open research question. Boyatzis (1998) refers to this as the "prediscovery 'fuzzy' stage" (p. 4) during which themes emerge from the data. The research questions in this iteration start from a position of having some understanding about how the Playground of Ideas worked in one local context, and so the research questions here relate to much more specific questions about the components of the intervention.

Many of the codes appeared in two different themes, and so these themes were combined to make new themes. This is consistent with the many components which make up the Playground of Ideas, and by extension, dialogic thinking. In this respect the formation of the codes themselves is a type of finding: there are aspects of dialogic thinking which are entwined, and which impact participants and wider cultures. It also accords with Rojas Drummond's (2010) observation that there is a need to conduct "micro-analytical work centred on the nature and quality of argumentation indicators and more macro-analytical levels, corresponding to institutional and social contexts" (p. 102). The coding which was carried out on all of the teacher responses is shown in Appendices 13 and 14, and the table below shows the original themes and the new themes created by combining the originals.

Table 7.4. Themes identified for analysis of questionnaire

Original themes	Combined new themes
Wider curriculum + Quality of discussion	Quality of discussion in the wider curriculum
Quality of discussion + Relationships	Relationships in discussion
Teacher learning + Teacher change	Teacher change through learning
Child change + Engagement with images	PoI facilitating children's development
Teacher change + Wider curriculum	Teaching changes in the wider curriculum
Child change + Quality of discussion	Children's improvements in discussion
Child change + Teacher change	

7.6. Findings

The findings are presented according to the relevant research question, with data drawn from the appropriate sources.

7.6.1. Do children have a comparable conceptual understanding of the Playground of Ideas when it was taught by a non-specialist teacher?

Table 7.5: Levels of understanding of Slide and Climbing Frame

Level	Slide (no.)	Slide (%)	Climbing Frame (no.)	Climbing Frame (%)
1	15	8.7	21	12.1
2	38	22	53	30.6
3	84	48.6	65	37.6
3+	36	20.8	34	19.7
Total	173	100.1	173	100

Table 7.6: Key to levels

Slide	Climbing Frame
Level of understanding (lowest to highest)	**Level of understanding (lowest to highest)**
1. No mention of being brave or talking	1.No mention of climbing up or adding ideas
2.Mentions being brave OR talking	2.Mentions adding on OR climbing up
3.Mentions being brave in connection with talking	3.Mentions adding on or climbing up in connection with sharing ideas
3+.Mentions the above and adds more details	3+.Mentions the above with specific reference to the top talking tips

These figures indicate that children have good levels of understanding of the Slide and the Climbing Frame. The level 2 responses indicated that the children connected the image to the aims of the relevant item of play equipment. However, the responses were not always developed enough to give a higher level, which is likely connected to the young age and writing ability of the participants.

The numbers which were given above are illustrated with examples of responses from the questionnaires. The quotes were selected at random from the relevant section of the questionnaire and set alongside the responses from iteration 2a. Spellings have been corrected where the intention was clear.

Table 7.7. Examples of comments from Iterations 2a and 2b

Question	**Iteration 2a (sessions taught by practitioner-researcher)**	**Iteration 2b (sessions taught by class teacher)**
Why do we go on the slide?	Because we're being brave and sharing our ideas in front of the whole class (Emma, level 3) Because we can be nervous to say something (Lizzie, level 2) Don't be scared of sharing your ideas. It's like you're on top of a big slide (Level 3+)	'To be brave with our talking' (Suzie, level 3) You're nervous at the top, and then you go down and be brave' (level 2) To show that we can go down the slide and be brave when we share our ideas (Leila, level 3+)
Why do we go on the climbing frame?	So we can get higher and higher (Finley, level 2) Can I give more information to your idea? (Philip, level 3) 'To follow on from what other people say and climb up the climbing frame' (Peter, level 3+)	'We go up and up' (George, level 1) 'To climb to the top and be above' (Max, level 2) 'To climb on top of people's ideas' (Chloe, level 2) 'To go on top of each other's opinions to the top' (Elsie, level 3)
What did you like talking about?	'The Swing when you get to choose what side you're on' (Caleb) 'I liked talking about the hamster meat and going on the swing' (Sky)	'The slide because it was being brave and I like being brave' (Chloe) 'I liked talking about the people on the train track' (Oliver) 'The swing because it was fun' (Florrie) 'The hamster and the swing' (Nathan)
Which philosophy question would you like to ask?	'What is the next piece of equipment?' (Emma) 'Would you rather be a	'Would you rather be a jaguar or an orang-utan' (Benji)

	swimmer or a climber?' (Caleb) 'Would you rather eat insects for the rest of your life or your dad does a naked dance in Tesco?' (Lucy)	'Am I good?' (Rufus) 'Would you rather just eat wotsits or grapes?' 'Would you rather be funny or be clever?' (Lyra)

These examples provide further evidence of the similarities between the answers that children gave in iterations 2a and 2b. This is also supported by evidence from the teacher's questionnaire, as there was a set of questions which asked about how teachers' perceived the children's engagement with the Playground of Ideas images. One teacher commented that "they seemed to know straight away what they were for", and another that children "understood they were going on the swing etc. for a reason". Two teachers indicated that children were engaged with the images of playgrounds, with one commenting that they thought that "they might be more interested in the pictures and less interested in what they meant"; they then write that this was not the case, but another teacher also indicated that they gave the children some time to talk about the images as "they all had playground stories to tell". This teacher was positive about this, however, and gave the children some time to talk about the images in relation to their own experiences because they "thought this would be another way of getting [the children] talking". These findings indicate that the design decision to base the intervention on a children's playground was an appropriate one for this age group.

The questions that were not measured by levels indicated similar patterns in answers to the first iteration group. For the question 'What did you like talking about' there were three categories of question identified in the previous iteration, and the responses were divided equally into these categories:

References a piece of Playground equipment (P)
References a particular session question (S)
References a 'Would you rather…' question (WR)

The responses in this pattern largely fell into this category, as shown in the table below. However, there were a small number of responses which did not fit into any category, hence the inclusion of the Other category. The total is higher than 173 because some children's responses fit into more than one category.

Table 7.8. Responses to question 1: what did you like talking about?

Category	Number of responses
References a piece of Playground equipment (P)	61
References a particular session question (S)	69
References a 'Would you rather…' question (WR)	73
Other	7
Total	210

Data from the teachers' questionnaires also provided an indication of how this question is answered. One of the themes was identified as 'Engagement with Images' (EI), which was used when the teachers referred to the ways in which the children had engaged with the images. The Swing and the Slide were referenced as "really popular", and one teacher explicitly mentioned that children "understood that they were going on the swing etc. for a reason". Several of the teachers also gave their professional opinion of the use of playground images to represent the set of skills and dispositions: one teacher commented that it was "pitched for children" and another that the images were "appealing".

This theme was also linked to two others because of overlapping codes. The two other codes which were linked with EI were Relationships (R) and Quality of Discussion (QD), to make the new themes Relationships in Discussion (RD) and Impact of Images on Discussion (IID). It is interesting that these two themes broadly fit the headings of dispositions and skills, because these have been the two foci of dialogic thinking since the conception of the intervention.

I had to use my judgement to decide if some of the comments relating to the Climbing Frame should pertain to the theme of RD or IID, and this often was a matter of the nuance of language used. This is an example of how the skills and dispositions of dialogic thinking entwine, because although the "climbing frame…got them used to giving reasons more automatically", and "listen to each other", both of which were in the IID category, one teacher indicated that before the intervention it was "hard to get them to actually listen to each other" and that the Climbing Frame "really helped". This indicates that the relationship between the children changed and that the engagement with the Climbing Frame was a source of transformation in the way that the children related to each other.

7.6.2. Can the Playground of Ideas resource pack be used successfully by primary teachers outside of a local context?

a) Does the Playground of Ideas have an impact on teaching practice?

The data from the previous section indicate that children do have a comparable understanding of the Playground of Ideas when taught by their own class teachers directly from the resource pack. This was reported not only by the children themselves, but also the in analysing the data from the teachers' questionnaire, in which examples were given of the positive (in their professional view) impact of the intervention on the quality of classroom discussion (which extended outside of the sessions) and the children's classroom relationships. All of the teachers indicated that the quality of discussion was "better", for a variety of reasons. In line with previous research examined in the literature review, this indicates that the Playground of Ideas functioned successfully as a dialogic pedagogy in contexts outside of the local one.

However, there are other criteria to fulfil to ascertain if the intervention was successful in these contexts. The design principles to this point stated that an intervention to begin to develop the dialogic thinking skills and dispositions of children in the target age group should be easily accessible in terms of form and content, preferably with no additional need for training. It should also enable teachers to consider themselves as learners (and therefore part of the Community of Inquiry). The following paragraphs consider the success of the intervention according to these criteria.

Firstly, all of the eight participating teachers indicated that they completed the ten weeks of the intervention, and being able to complete the sessions is a reasonable first indication that it can be used successfully. At this point it should be mentioned that there were a large number of initial respondents who did not respond to follow up emails, and it could be argued that these teachers did not feel that the resources were usable. It is hard to gauge the reasons for non-response, of course, but I give some account of this in section 7.8., based on information that was later discovered.

In addition to reporting on how the children engaged with the resources, teachers also reported on their perceptions. When the teachers were asked what they thought of the playground images, the majority responded in terms of the benefits for the children, and a result of this they "liked" them and that they were "great". The impressions of the questions for discussion were somewhat different, with one teacher reporting that they were "interesting and alarming", with a concern that the nature of the discussion "might upset them". There was also a concern that the questions might be "too advanced" which made one teacher "nervous". By contrast, the responses to the question 'What do you think the *children* thought of the questions for discussion' provided answers in which the teachers indicated that the children both engaged positively with the discussion questions and also exceeded their expectations.

The contrast between these two sets of responses indicates that teaching these sessions was also a transformative experience for the teachers; one reported that they "needn't have worried" and another that they "definitely didn't think [the children] could do that". A third stated that from a point of doubt about the suitability of the questions, the children "surprised me though, they had some amazing discussions". The theme of Teacher Change and Learning was one which was frequently identified. From a starting position of being unsure about the questions, teachers then come to take a different view of the children and their competencies of their classes as a result of the discussions. However, this does present a potential issue for the resources: teachers might not independently select to use resources such as this if the impression is that the content is too difficult for the age group of their classes. It would be beneficial, therefore, to add additional detail to subsequent resource packs to indicate that these questions may seem challenging but to refer to the experiences of these teachers as an indication that challenging questions are a good starting point for inquiry learning and are well-received by children.

In addition to the changes in views of the children's competencies and relationships with them ("I feel like I know the children in my class better"), the responses to the question which asked if the intervention has changed their practice were met with a variety of affirmative responses. Many teachers indicated that the improvement in children's discussion skills – especially their increased willingness to listen to each other and to give reasons for their ideas – were of benefit across the

curriculum, and specified that they drew attention to the playground images while teaching other subjects, including mathematics.

While links with other curriculum subjects were made, a particular point of note was the frequency with teachers reported that the Playground of Ideas was "different". A number of teachers stated this as a reason for why they enjoyed teaching the sessions. All of the teachers enjoyed teaching the sessions, although one reiterated that she was nervous because "the discussion could go anywhere". Other responses were that "it felt like a bit of an adventure" and "it was great to do something different". This was also the case with the teachers' perspectives of the benefits for children as well. The Playground of Ideas was contrasted specifically with the mainstays of the current primary classroom, English and maths: "it was nice for all of them to do something that wasn't based on English and maths. It was nice for me too!". One teacher contrasted the oral approach of this intervention with the emphasis on writing, citing the example of a child in her class for whom the Playground of Ideas made a particular impression because although the child "isn't keen on writing", during the intervention sessions "he really got to express himself…I think it gave him more confidence".

One potential issue with the intervention is that, of a sample of 8, 2 of the teachers indicated that they did not teach all of the sessions within ten weeks because of other pressures in the school timetable. Of course, this is a stand-alone intervention so it should not be surprising that it may have been seen as an 'add-on', however, given that there is so little emphasis in the national curriculum on Spoken Language, and Philosophy with Children is not on the curriculum. In addition are the concerns of Mercer and others (although attempts are being made) that there is no framework of progression for these skills and so such interventions may be regarded as add-ons in a busy classroom context. Indeed, in my own experience of instigating Philosophy with Children in schools, it has been necessary to make creative suggestions to head teachers who, while sympathetic to the pedagogy, need explicit justification for the curriculum time given. Such justifications have included the Personal, Social, Health and Emotional (PSHE) requirements of the curriculum and, at the suggestion of one head teacher, the British Values requirement which English schools have – the reason being that one of these values is democracy and that encouraging shared ideas exemplified this.

One of the teacher's comments was that they "wished there was a sequel". This does raise an issue, identified by Alexander (2004) that one of the principles of dialogic education should be that it is "cumulative" (p. 28). Without a framework for, or a requirement to teach, dialogic competencies, it is difficult for teachers to know how children might have previously developed these with other teachers, or how teachers might then further develop these competencies. This this presents difficulties when considering how to embed pedagogical approaches into wider education contexts rather than in response to the interests of individual teachers.

7.7. Discussion

The discussion focuses on the overarching research question, **'How can a teaching-and-learning intervention support primary age children of six- and seven-years old in England to begin to demonstrate dialogic thinking in whole-class and small group contexts?'**, drawing the specific research questions of this iteration into the larger discussion of this question to add to the design principles. This section considers the implementation of dialogic pedagogies in the school context and the role of the teacher in such pedagogies.

7.7.1. The place of dialogic thinking pedagogy in the school context

A great deal of current theorising about Philosophy with Children practice in schools decries using philosophy for children as a means to an educational end (Storme and Vlieght 2012; Biesta 2011; Murris 2016). However studies into both Philosophy with Children (Education Endowment Fund, 2015) and dialogue (Vrikki *et al*, 2019) focus on the impact of interventions on attainment in standardised testing. Bereiter and Scardamalia (2018) also make the observation that "the mainstream educational literature is now solidly on the side of doing skill teaching within regular school subjects" (Bereiter and Scardamalia, 2018, p. 76). Integrating thinking skills, including dialogic thinking, into the curriculum may be a way of ensuring that they are not side-lined, and research which focuses on improving children's attainment in subjects in which the school in ranked may be more appealing to funders and to

participants. In addition, different subjects have different epistemologies and so developing dialogic thinking skills within science or history, for example, could look quite different. Some of the teachers' comments in this iteration did highlight Bereiter and Scardamalia's concerns that thinking skills activities are seen as optional, add-on subjects. This might also have accounted for the high attrition rate, about which more is discussed in the research review section.

However, there was considerable indication in this study which showed that teachers viewed the Playground of Ideas as an 'antidote' to the English and maths-heavy curriculum. Teachers viewed this as a benefit both to their own teaching and to the children. This included the children's experience of the classroom more holistically (such as becoming more confident and discussing questions that were of interest to them) as well as specifically contrasting the activities of the intervention with 'usual' classroom activities such as writing. Therefore there may be some value to presenting a dialogic thinking intervention as an explicit strategy, especially when children are younger and dialogic thinking is being introduced to children.

Of course, as the teachers in this study, and a large number of research studies attest, there is great interest in how thinking skills are applied in certain subjects (Hofmann and Ruthven, 2016, 2018; Kazak, Wegerif, Fujita, 2015; Maine 2015; Kuhn, 2010;). The teachers in this study valued the intervention for what it offered in addition to the regular curriculum, but these skills are applicable and productive across the curriculum; while it is important to develop these skills, and doing this in explicit sessions could be an effective means of this, investigating how they are transferred into curriculum subjects is also of importance.

7.7.2. Indications of the role of the teacher in dialogic thinking

This iteration indicated that teachers experienced learning and change as a result of teaching the Playground of Ideas. This was in response to the capabilities of the children, which were perceived as beyond expectations, and also in the ways in which their teaching changed, which was an attempt to integrate dialogic approaches to pedagogy across the curriculum. As a growing number of studies attest and theories postulate (Roche, 2011; Scholl, 2014; Millett and Tapper, 2012), it is

possible to reconfigure teacher attitudes to pedagogy through the Community of Inquiry. As Scholl (2014) writes, “crucial” to this is that teachers “genuinely view themselves as learners” (p. 90). This is an echo of Lipman’s earlier view that teachers must open themselves to reflection.

Scholl’s empirical study found that interviews with teachers after they had facilitated CoPI sessions indicated they had developed dispositions in-line with those of Community of Inquiry pedagogy – what Scholl refers to as a “critical juncture in pedagogical change” (p. 89). However, the question remains as to teacher motivation in the first instance: must teachers really genuinely view themselves as learners before embarking on dialogic pedagogies, or does this change as a result of the process. This study does not provide particularly appropriate means to identify answers to this from the teacher data, partly because the participants were a self-selecting sample, and partly because the study involved an explicit reflection from teachers. To what extent this would occur outside of the research context is one which, obviously, cannot be answered from within the research context.

However, the point is one of importance, because relationships are a vital consideration in dialogic pedagogies, and is also one of the design principles for this study. The role of the teacher is a key point, then: it will be difficult for children to engage in dialogue if they are not given opportunities to do so; yet for teachers who do not engage in dialogic practice, presenting the need to do so can be challenging without also being didactic in the presentation of that need. As Freire (1972) writes, such an imposition when a need for it is not felt or known is counter to community of inquiry practices and will only serve to reinforce teacher/learner divisions and hierarchies. Therefore a further consideration of the role of teachers is now given here. Scholl interprets this within the framework of social constructivism, offering the following diagram to illustrate her point:

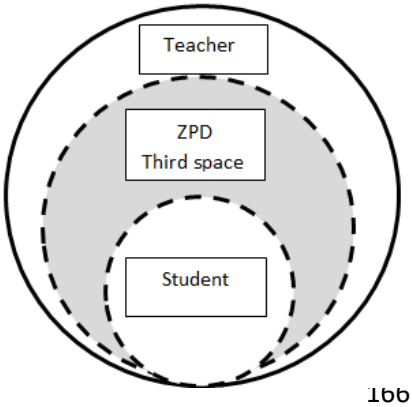


Figure 7.2. Dialogic interpretation of the ZPD (Scholl, 2014, p.100)

In Scholl's reinterpretation, when teachers are engaged in dialogic pedagogy the Zone of Proximal Development (ZPD) is no longer a one-way development of student towards teacher, but the boundary on the teacher's side is conceived of as porous too. And of course there is not only one student in a Community of Inquiry but many, and many circles with porous boundaries and a third space in the middle of them all (as a further diagram of Scholl's attests, p. 101).

I think that the diagram is a useful one, but I do not see it as necessarily belonging to social constructivism. The conceptualisation of a porous boundary of teacher and student with a two-way interaction into a third space in between is also one that applies extremely aptly to Buber's dialogic approach. Friedman (1992) coined the term 'a bold imaginative swinging' to describe what happens when a dialogic relationship occurs. It means that one is "seeing through the eyes of the other and experiencing the other's side of the relationship without ceasing to experience the relationship from one's own side" (p.38). Kramer (2013) identifies this movement as "nearly simultaneous" (p.30) – but not completely so. In addition to the learners developing certain skills at which the teacher has already developed, the teacher should also swing into the learner's perspective, before swinging back into their own.

In a postscript to "I and Thou", Buber (1923/2013) indicates that the educative role is one which is not completely reciprocal, while the teacher swings into the life of a learner, the reverse is not the case to the same extent. This may be because learners are already swinging into the greater cultural life of the teacher (that is, toward educated adulthood), and so the role of the teacher is to swing into the role of the learner in order to understand their experiences. The middle zone, instead of being conceived as the ZPD is instead the dialogic space in which meanings are made. Therefore the primary role of a teacher during inquiry dialogue is to help students pay attention to the process and quality of their reasoning – from questions to judgments – rather than to tell students what the answers should be. This dialogic stance (Wells and Arauz, 2006) enables teachers to act as guides but also to be open to what the child is bringing to the educative experience.

7.8. Design review

This section provides a review of the research methods for this iteration, and then considers the next steps for the study, given that the findings from this iteration indicated that teachers can deliver this intervention with fidelity to the programme, and that children in a range of contexts engaged with the intervention in the intended way.

7.8.1. Review of the research methods

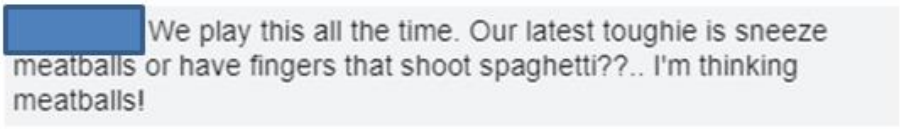
A consequence of the rationale for this intervention – to ascertain if the Playground of Ideas could be formulated as a resource which teachers could access without researcher input – naturally meant that the resource pack needed to stand by itself without researcher presence. The chosen method for distribution of the resources was a social media advertisement for teachers to try the free resources; this approach initially seemed promising as there were approximately 80 responses within the first day of the advertisement from schools in a very broad geographical spread of the UK (at which point I removed the advertisement). However, having dispatched the resources, maintaining email contact with the participants was very difficult. I had an email schedule to ensure regular contact with those who had received the resources, yet many of those who received the resources did not respond. Others did initially, but then as the iteration progressed contact was also lost.

I did pursue the reasons for the attrition rate, emailing all of those participants from whom I had not yet heard and asking for a response even if the resources were not being used. I stated that it was of interest to know why they were not being used, and that I would be pleased to hear from them even if they no longer wanted to participate in the research. I had three email responses to this request: two of the respondents cited personal reasons (illness and a reduction in working hours) and one cited a change in head teacher and implementation of new policies resulting in increased workload. This highlights one of the issues with approaching individual

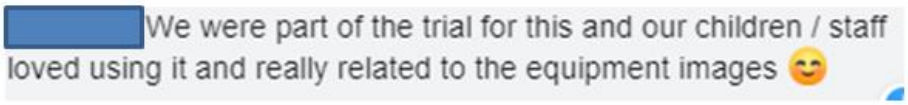
teachers to take part in a research project – or indeed with implementing any intervention at the level of the individual teacher.

The Teacher Scheme for Educational Dialogue Analysis (T-SEDA)[7] project on which I worked as a research assistant while completing this thesis (although unfortunately after I had completed this iteration), also had similar findings. The report which was sent to the funder (the Economic and Social Research Council, ESRC) indicated that uptake of the resources occurred most frequently where there were several teachers taking part in the same school or cluster of schools, or where school leadership had instigated the participation in the project. This may indicate that where there are many different competitors for teachers' attention and curriculum time, involving school leadership in the recruitment phase may result in higher project completion rates.

In addition to this, conversations with experienced colleagues indicated that many of these teachers could have been lured by free resources which the teachers did not intend to use, or at least not immediately. This was corroborated several months later when – having assumed that the teachers who did not reply were not using the resources – there were posts on social media which indicated that the resources were being used. Three examples of these are below:

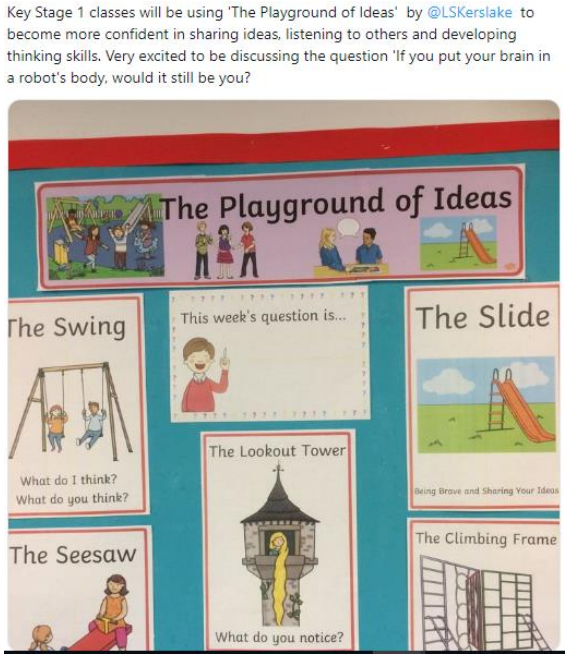


The example above is in reference to the 'Would you rather…?' game which accompanies the Playground of Ideas sessions.



This school had obviously trialled the resources (although I do not know in what timescale), but had not responded to email contact.

[7] https://www.educ.cam.ac.uk/research/projects/tseda/



This school had used the resources, and also adapted and chosen their own images.

All of these cases would have been interesting to follow up, however by the time I became aware of this, I was carrying out the final iteration and did not have the capacity to follow up with these previous schools.

Indeed, this iteration highlighted the challenges of carrying out design-based research as a solo researcher. A more effective approach would, on reflection, have been to recruit a larger number of schools and to initially establish personal contact with the teacher or head teacher before sharing the resources to be taught independently. This would also have the benefit of not being a self-selecting sample such as was the case with those who responded to the social media advertisement. It is highly likely that these respondents already had an interest in Philosophy with Children or in interventions for educational dialogue. As a solo researcher, however, it was not possible to devote the time recruiting large numbers of schools by individual contact because this was one iteration out of four to be carried out in a three-year time frame.

7.8.2. Next steps in the design

Iterations 2a and 2b compose the following section of the design framework:

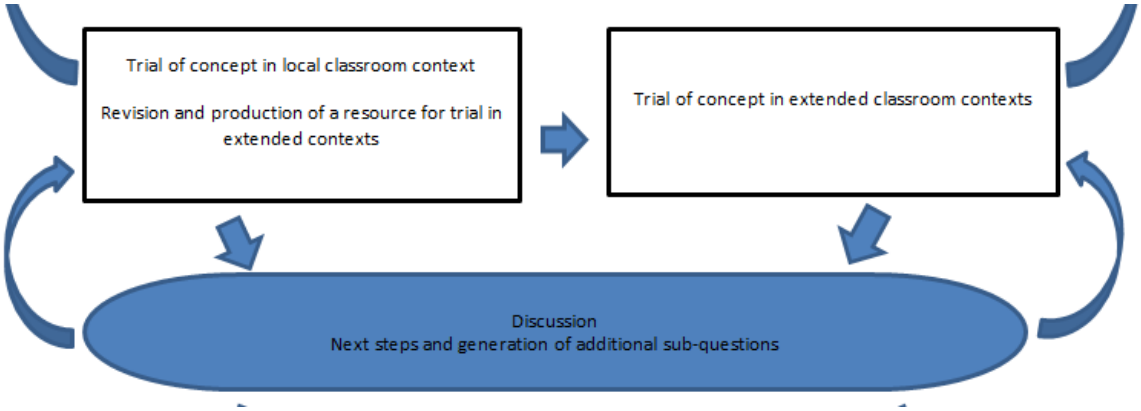


Figure 7.3. Current stage of the design framework at the end of iterations 2a and 2b

The findings from iterations 2a and 2b indicate proof of principle (Bakker, 2018) in the contexts in which the iteration was tested. At this stage, there were options for the next stage in the research design. For example, one option which I considered was to conduct a further iteration in extended classroom contexts but to use a different sampling method. It was noted in the review of the research design for this chapter that the sample of teachers was self-selecting, and that this may influence their fidelity to teaching the intervention and the children's subsequent engagement with and understanding of the Playground of Ideas. One option would have been to trial the Playground of Ideas again in contexts where head teachers had acted as gatekeepers. Teachers would therefore not necessarily be inclined toward dialogic pedagogies, and the findings could provide helpful information about how the Playground of Ideas was taught in such conditions, and if changes in practice occurred as a result. This approach would also have provided an opportunity to implement and trial one of the design principles which arose from iteration 1 – that interventions are more successful (in terms of uptake and completion) when there is greater integration into the school culture, for example being adopted as a whole-school approach or being endorsed (or insisted upon) by school leadership. If I had more time to complete the project, or been working as part of a larger research team then this would have been an interesting avenue of research to pursue.

However, there were also a number of compelling reasons to consider that an evaluation phase would be the most appropriate direction in which next to take the research. While proof of principle is an important finding, Bakker (2018) writes that it is not sufficient to indicate the success of an intervention, and that an evaluation phase is required. Additionally, while an additional iteration of extended classroom

contexts might have indicated more about the practical aspects of delivering the intervention in contexts, I think that an evaluation phase has greater scope for integrating and understanding the theoretical and practical aspects the design. That children demonstrate the use of particular language during Playground of Ideas sessions is of limited help in understanding how the sessions develop children's dialogic thinking outside of those sessions. It might be that they are, or become, adept at using the Climbing Frame 'Top Talking Tips' during those sessions, but do not display this in other areas. The research is specifically interested in children's ability to demonstrate dialogic thinking within small group work, and so an evaluation of the impact of the Playground of Ideas on work within a small group context seems to be a vital area of investigation for the next iteration. Chapter 8 reports on the details of how this iteration was conducted.

7.8.3. Revision of the intervention

As the intervention has been shown to be effective from the perspective of teachers and learners, making major revisions before an evaluation phase would invalidate these findings and so it was necessary to 'freeze' the intervention as it was. This is in accordance with a pragmatist epistemology in which knowledge is 'pinned down' for a time in order to investigate it more fully. As the end of this iteration, the intervention will be considered as not under further revision until findings are generated from the next iteration. This will provide more information about the intervention, and if it is not successful in an evaluative context then further revisions to the intervention and the design principles will be made at that stage.

In any case, the findings indicated that major revisions at this point were not required. There were some indications from the teachers' comments and from the responses to the Likert Scale questions were that the Seesaw was perhaps the most difficult piece for the children to access, and so I followed up this by email with the teachers. Their email comments suggested that the session plans were difficult to follow in places, and so this was revised with the help of the teacher from iteration 2a. I also added a practice question for the Seesaw that was easier to access for the children by making the reasons given for two options more dichotomous.

7.8.3. Design framework 4

In this iteration, the design principle relating to teachers' practice has been specifically tested, and the findings are that the Playground of Ideas intervention is accessible as a stand-alone resource for teachers. This iteration also provided further supporting evidence that children do engage with the intervention in the way that was intended. This iteration has also added to the design principles, which are given below denoted by a number 2b) to indicate the intervention which gave rise to them. The design principles which have been formulated ahead of the third iteration are now as follows:

A teaching and learning intervention to develop the dialogic thinking skills of six- and seven-year-old children should:

- **Develop relational dispositions for critical thinking as a collaborative activity**
- **Promote argumentation language in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

1) be easily accessible to teachers in terms of the content and the format in which it is presented. If this can be done with no need for additional training then this would be of benefit to individual teachers.

2a) encourage teachers to also consider themselves as learners

2b) provides explicit dialogue-based teaching-and-learning activities and also

2a) provide opportunities to link to other curriculum content

1) take the form of a coherent strategy

2a) incorporate argumentation techniques

2a) provide strategies for language modelling

2b) be embedded in the wider school contexts where possible

1) consider ways in which all students could engage in dialogue

2a) provide an explicit strategy by which children are encouraged to share their ideas

2a) provide opportunities for non-verbal dialogue

1) incorporate open-ended inquiry discussion

2a) involve physical movement as a discussion technique

2a) provide inquiries which children experience as challenging

2b) provide opportunities for meta-level reflection on dialogue

Chapter 8. Iteration 3: Evaluation of intervention

8.1. Rationale for the iteration and research questions

Iterations 2a and 2b have identified that the Playground of Ideas intervention presents the dialogic thinking skills and dispositions to children in a way which they understand, and that children engage in these competencies during the sessions. In addition, teachers can use these resources to teach sessions independently, even where they have no prior experience of teaching Philosophy with Children. When taught by their own teachers, children demonstrate comparable levels of understanding and engagement with the Playground of Ideas, indicating that the intervention is applicable in wider contexts.

It was important to conduct these iterations to understand, as is concordant with DBR, how the intervention was used and engaged with by the development of design principles. These informed the development of this testing phase and give an indication of the way in which the analysis of the testing is conducted. This iteration therefore proceeds to conduct tests on how it affects children's dialogic thinking skills and dispositions.

In the literature review, an example was highlighted (Maine, 2014) of how children's talk could exhibit different productive features depending on whether the task was open- or closed-ended. Discussing a philosophical question is an open-ended task; other tasks are closed-ended, where children are seeking a correct answer.

When children are learning curriculum content, very often they are engaged in finding out answers that are already known (closed-ended). This might be through inquiry or experiment, or through problem-solving tasks. This might be individual work, but it is common classroom practice for these investigations to take place in groups. The 'Background to the Research' section alluded to this practice in mathematics, where children work in groups of three, sometimes in conjunction with objects, to solve mathematical problems.

It was therefore a point of importance to identify if dialogic thinking skills and dispositions developed during open-ended dialogue positively impacted on children's

ability to correctly answer closed-ended tasks, and if their dialogue reflects this. This could provide an indication that dialogic thinking is not only compatible but also advantageous in other areas of the curriculum. This also could also provide a means by which to identify which aspects of dialogic thinking seem to be the most successful in close-ended question group work.

The research questions for this iteration are:

1. How is children's dialogic thinking characterised in small group work before and after the intervention?

2. How can Buber's dialogic approach provide understanding of classroom dialogue?

8.1.1. The research context

This iteration was conducted with two schools in the south of England. One school was an urban school with a class of 30 children, and the other was a rural school with a class size of 12. Neither school had above-average levels of pupil premium children nor children who spoke English as an additional language. Contact was made initially with the head teachers of these schools who agreed that Year 2 could take part in the project, following which a meeting with each of the Year 2 teachers was held. The project timeline was explained to them and resources given. The same ethics procedure was followed as for the previous iterations (Section 6.2).

All pre-testing was carried out at the start of the Spring term (January) before the teaching of the first session took place. The teaching sessions took place during February, March and April, with post-testing taking place in the two weeks following the teaching of the final session.

8.2. The test

The test was a non-verbal reasoning test which was administered before and after the intervention. Tests of comparable difficulty were completed by children individually and in groups of three, and the group tests were video recorded. The

next section details the research on which this approach was based, and how the test was chosen and administered.

8.2.1. Selecting and administering the test

A number of programmes which aim to develop collaborative thinking skills have used testing and subsequent quantitative and qualitative analysis in order to determine the effect of the programme. For example, the *Thinking Together* programme (Mercer and Wegerif and Dawes, 2000) used Raven's psychological test as a measure of the effect of that intervention. More recently, Wegerif, Doney, Fujita, Perez Linares and Andrews (2017) have developed a group measures test, a non-verbal reasoning test which can be taken by individuals and groups of three in order to establish any added value from the collaborative work. Tests are taken individually and then a comparable test is taken in groups of three. The group measures test developed by the authors referenced here was designed specifically for the authors' study, and was aimed at older children. It is similar in style to the Raven's Progressive Matrices, however.

Shapiro's 1973 evaluation of the Follow Through programme (in Patton, 2014) used multiple means by which to establish the effects of the programme (including general interviews questions, self-rating techniques and sentence completion items), but she later came to also question the ecological validity of test situations and reject this approach because, she came to believe, it was not possible to tell whether the effects have been internalised. Given that one of the questions under discussion in this project is to what extent children develop dialogic dispositions, rather than only an instrumental use of the Playground of Ideas talking framework, this is a key issue.

This study will follow Wegerif's *et al* (2017) example and utilise a non-verbal reasoning group measures test. There are several reasons for selecting the group measures approach using a non-verbal reasoning test in the context of this study. As has previously been mentioned, a closed-ended task could offer a greater indication that the dialogic thinking skills and dispositions have been internalised to a degree because the skills learned in one context (open-ended discussion) will be applied to another (closed-ended questions). There is also the social context to consider;

although the Playground of Ideas sessions take place under the guidance by a teacher, the test sessions will take place in small groups of three without an adult presence (aside from that of the researcher). Therefore children must organise their group and discussion themselves. These factors will provide a mechanism to ascertain if and how the children demonstrate transference of the competencies which the intervention aimed to develop.

This is a more novel approach, as "the majority of empirical studies have focused on identifying the verbal and social practices that occur *during* dialogic discussions" (Reznitskaya et al, 2012, p. 289). Therefore, the authors claim, key questions about the effectiveness of dialogic pedagogy remain unanswered. Howe and Abedin (2013) also indicated that this was the case; they carried out a review of studies into dialogue over past 40 years and found that "virtually all studies" (219 of 225) "revolve around samples of dialogue that were recorded while the lesson was in progress" (p. 330). There have also been a number of studies which have found improved *individual* post-intervention performance on a range of measures, including reasoning (Kuhn and Udell, 2003; Sprod, 1998). These types of studies observe dialogue during curriculum teaching and individual gains, but indicate less about group thinking processes, particularly how children manage these processes in the absence of an adult. This accords with Wegerif's *et al* (ibid) concerns that when dialogue is observed as part of a lesson, this is "indirect as a measure the effectiveness of group-thinking in itself" (p. 26).

Considering how best to capture true dialogue was one of the most challenging aspects of this study, given that perhaps capturing true dialogue was not really possible. Wegerif (2011b) claims that when dialogue is really happening, when the dialogic space is open, then one has a 'feeling' for it. In a sense this seems accurate – as a teacher I experienced what would be called 'a-ha' moments, when children seem to connect and to make meaning together that did not seem to be there a moment before. Yet, when one is observing these moments but not participating in them, it seems impossible to know what is actually taken place during those moments of true dialogue, when perhaps a researcher is more like Buber's observer rather than onlooker. This is amplified by Buber's (1947/2002) assertion that dialogue need not be verbal or even really fully conscious, but constitutes a kind of knowing that is not quantifiable – because then, of course one is no longer

experiencing the I-Thou relationship, but instead the I-It. Kramer (2013) also asserts that “dialogical behaviours between persons in educational setting have no reducible meanings or content that can be analysed” (p. 26).

Yet this line of thought is not productive: if it is not possible to truly capture dialogic moments, then any research on the subject is futile. It is akin to the radical critique of interviewing that no interview can give any usable data about the world (in section 6.3). Clearly, as has been seen in the literature review, there has been a good deal of research into classroom dialogue, and there are indications that there are types of interaction which promote collaboration in the classroom. As Martens (2013) writes, learning how to speak with others can mean that “thoughts, concepts and claims can become clearer,…thinking can give direction and be enjoyable, and [children experience] the existence of unmediated wonder and a wordless understanding of people, experiences and phenomena” (p. 164). This provides a link between the skills to engage in dialogue with each other and the dispositions for doing so, and also implies that the former can precede the latter. In many ways, this is a clear point. This is because the skills for being able to engage in dialogic thinking are also indicative of the dispositions for dialogic thinking. When one takes the time to explain a thought process to others (for example), this indicates respect and care toward another because one is seeing the other as an ‘other’ who is a separate consciousness with whom to engage. Learning the skills of how to do this enables the enactment of inclinations toward dialogic relationships. In other words, the dialogic relationship is primary, and the skills which might be considered as critical thinking or argumentation skills form part of successfully negotiating these relationships in an education context.

The test format which will be used is a non-verbal reasoning one: these are tests which assess children’s reasoning through pictures. For example, in the Raven’s test there are patterns to complete by finding the next picture in a sequence. Children in English state schools do not have any instruction in non-verbal reasoning, and the fact that the participants will not have had any previous experience of non-verbal reasoning activities is a benefit for this study because the test will not be one of any previous curriculum experience or capability. A non-verbal reasoning test was chosen specifically because it does not measure any particular curriculum content.

The tests used in this iteration were the commercially produced Bond non-verbal reasoning tests which are published in age-specific categories from age 5-11, which is when the 11+ exams are taken to assess selective entry to UK grammar schools. Bond claim that non-verbal reasoning tests are 'a neutral way of testing aptitude levels in children' because they "do not require any prior knowledge", and furthermore they are tests which are "not part of the National Curriculum in state primary schools"[8].

The Bond commercially produced test was chosen because there are few tests available which are aimed at the target age of the children in this study. The Raven's Coloured Progressive Matrices are an obvious exception, as they were designed for primary children aged 4-11 (Raven, Raven and Court, 1998). They have primarily been used as a measure in psychology-based studies (Kenny, Hill and Hamilton, 2016), but also within early childhood studies (Stagnatti, Bailey, Hudspeth Stephenson, Reynolds and Kidd, 2015).

However, the age group of the children in the study was problematic for the application of the Raven's Coloured Matrices. There are two tests available, the Coloured Progressive Matrices, for children aged 4-11, and the Standard Progressive Matrices Plus version, for children aged 7-18. However, there is an overlap in the normative data for children aged 7, which is the age of the children in this study. The advice when purchasing the tests is to use professional judgement to administer the most relevant test[9]. However, this was not possible with a this sample size of children with whom I was not familiar, and would also have rendered the test difficult to apply in non-local settings.

Therefore I chose the Bond test, which has been designed by school year; there is a specific set of tests for children aged 6-7 who are in Year 2. I acquired four different tests, all developed for children within this age group, and designed to be of equal difficulty. The Bond test included four types of puzzle: choose the odd one out, add the next image in a pattern, complete a story by adding a picture, and match pairs of objects. Examples of these questions are below:

[8] https://www.bond11plus.co.uk/non-verbal-reasoning#examoverview

[9] https://www.pearsonclinical.co.uk/Psychology/ChildCognitionNeuropsychologyandLanguage/ChildGeneralAbilities/Ravens-Educational/Ravens-Educational.aspx

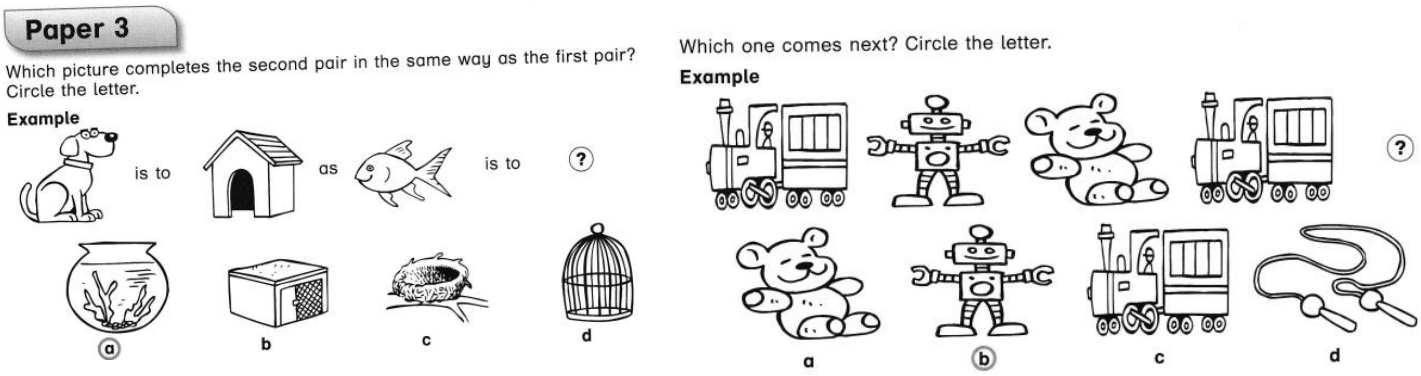


Figure 8.1. Examples of Bond non-verbal reasoning questions

8.3. Analysis

In their paper, Wegerif *et al* (2017) highlight that individual and triad test scores by themselves cannot tell a researcher enough about what is occurring, and an analysis of video data of triad interactions is important. Their study utilised an approach in which the researchers made notes from the video recordings without transcription to "imagine themselves as a member of the group and explicate intuitions about what is going on" (p. 19). The advantage in this approach is that researchers can correlate "observations with a quantitative measure of group success and failure" (p. 24). This allows for conclusions to be drawn not only that some groups were more successful than others, but why this was the case. Maine and Hofmann (2016) also highlight that qualitative data should accompany quantitative to "illustrate what is actually happening" (p. 45). Therefore, in this study, the test results themselves will be taken into account but the sessions will also be video recorded and the children's language analysed.

I now turn to a consideration of how the children's language will be analysed. The Playground of Ideas intervention was developed by bringing together normative features of a number of different disciplines, that is: when certain features are present, children are considered to be competent in this area. The literature review identified the areas of Philosophy with Children, dialogic approaches, and critical thinking through which overlaps were identified and the combination of these was referred to as dialogic thinking. The previous sections made the case that dialogic

thinking can be considered as critical thinking and argumentation within a social collaborative context. Therefore the intervention sought to:

- **Develop relational dispositions for critical thinking as a collaborative activity**
- **Provide models of argumentation language in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

Through further work, the Playground of Ideas images and other features of the intervention aimed to develop certain features of dialogic thinking which had been established from a review of the literature:

Table 8.1. Elements of dialogic thinking exemplified in the Playground of Ideas

Playground image	**Element of dialogic thinking**
Swing	Presenting and changing opinions
Slide	Conveying ideas confidently
Climbing frame	Building other's ideas by agreeing, disagreeing and adding more information, and justifying ideas with reasons
Seesaw	Evaluating reasons given
Lookout Tower	Observe and comment on other's contributions
Talk Rules	Establish the Community of Inquiry
Would you rather…	Giving reasons and presenting opposing viewpoints

As Wegerif *et al* (2017) note, testing to a model means specifying criteria of what counts as effective talk and then evaluating the extent to which the observed and recorded talk in a classroom changes as a result of an intervention in the direction of meeting these criteria. An intervention which has been designed to develop the dialogic thinking skills tabled above should therefore examine whether or not the criteria have been met. However, although the Playground of Ideas does aim to foster those specific competencies, it is because these are components of dialogic

thinking. As Brown (1992) writes, “components are rarely isolatable, the whole really is more than the sum of its parts” (p. 166).

Others have also identified that the form of analysis taken is one of contention. As early as 1970, Brody and Good developed a coding system for field observation, comprising a tick tally in various categories. However this has been criticised (Edwards and Westgate, 1994) for removing the utterances from their context and so being able to capture the full meaning of an utterance. As Howe and Abdedin (2013) remark, it can “eliminate the dialogic component from the analysis of dialogue” (p. 333). Lefstein and Snell (2020) make the salient point that this is done for the convenience – to be able to report on dialogue – because dialogue categories lend themselves to observation and quantification. In an earlier work, these authors (2011) highlight the limitations of transcription in the production of a data set when analysing dialogue: “in transcribing it we have reduced the sounds, sights and smells to a relatively flat record of the audible words spoken, with minimal indication of pauses and non-verbal communication” (p. 180).

Lefstein and Snell attempt to mitigate this by reviewing the video data again but through the lens of one of the pupils who was not particularly vocal during the dialogue. They repeat their analysis placing him in centre stage, and indicate how the transcribed data, and the interpretations of it, can look very different when the focus is changed. These authors were referring to whole class discussion, which is more problematic to effectively record. As they comment, when a whole class is videoed there is a lot which is missed: quieter or mumbled comments; glances or other non-verbal indications of dialogue; facial expressions, particularly where the camera is positioned at the back of the room.

This is a benefit of recording dialogue in small groups where the camera is trained directly on the three participants and able to capture more (verbal and non-verbal dialogue) than in a whole class discussion. Of course, this is of most benefit if the transcription also reflects this. For this reason, all of the video data which is captured in the pre- and post-tests will transcribed verbatim, together with a description of the children’s actions as still photo captures of the children. This is a key aspect of analysing dialogue because, as Wegerif (2016) highlights, dialogic space is not only created by the verbal dialogue but also the ways in which children inhabit the space.

Wegerif has also drawn attention to the dialogue that takes place in the silence – for example children often communicate with a gesture.

8.4. Findings

These findings answer the research sub-questions for this iteration:

1. How is children's dialogic thinking characterised in small group work before and after the intervention?

2. How can Buber's dialogic approach provide understanding of classroom dialogue?

An analysis of the characteristics of children's dialogic thinking is conducted in answer to question 1, while a consideration of question 2, which views these finding through a Buberian lens, begins to be developed in this section and is more fully explored in the discussion section which follows it.

The following table shows the scores from the individual and group tests before and after the intervention. The post-intervention tests highlighted in dark orange show the instances in which the group test score was higher than in the pre-test.

Table 8.2. Pre- and post-test scores

	Pre-intervention		Post-intervention	
Name	Group	Individual	Group	Individual
Eva	20	14	20	15
Macey		15		17
Jonathon		11		16
Felicity		17		20
Rosie	19	16	24	16
Sully		12		21
Aimee		19		22
Ava	19	8	21	19
Frankie		16		18
Robert		19		21
Tommy	18	18	22	20
Holly		12		16
David		17		20
Leila	19	19	21	20
James		18		21
Pryce		19		21
Toby	19	15	21	17
Andrew		20		21
Felix		10		21
Lana	14	12	22	13
Emilia		18		21
George		12		15
Kyle	18	19	22	19
Martha		17		17
Dan		11		13
Arthur	10	13	17	16
Adam		18		22
Peter		15		18
Luke	17	15	22	17
Aaron		18		20
Archie		4		6
Justin	17	17	21	20
Poppy		10		10
Caspar		14		16

The data for this group has been separated because two of the boys in this group, Evan and Dylan, had one-to-one help from teaching assistants to complete the individual papers in both cases. I was present in the classrooms, and observed the teaching assistants providing a great deal of guidance to the children, both of whom have additional learning needs. It is therefore not representative of the children's abilities, and so is not considered with the rest of the data.

Table 8.3. Data not used in this iteration

	Pre-intervention		Post-intervention	
Name	Group	Individual	Group	Individual
Evan	8	17	10	15
Dylan		17		16
Callum		8		16

The data have also been presented as tables which show the results of individual groups in order to make clearer reference when discussing individual groups:

Tables 8.4a-k. Pre- and post-test comparison by group

Table 8.4a

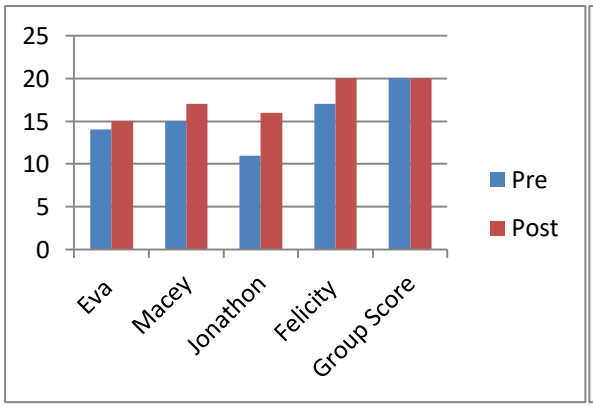


Table 8.4b

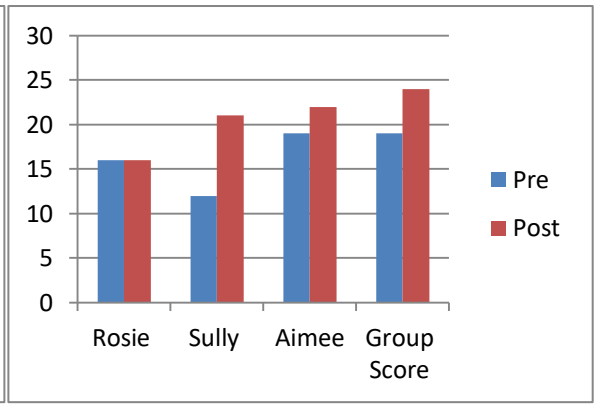


Table 8.4c

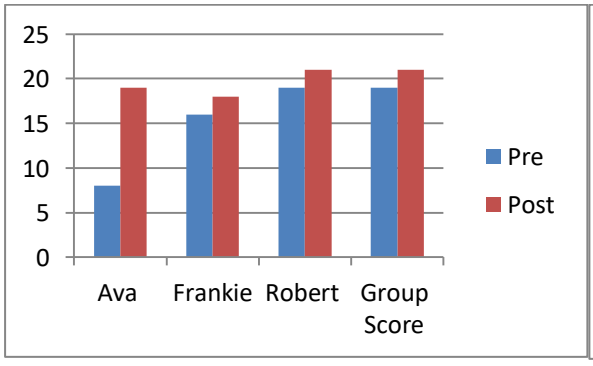


Table 8.4d

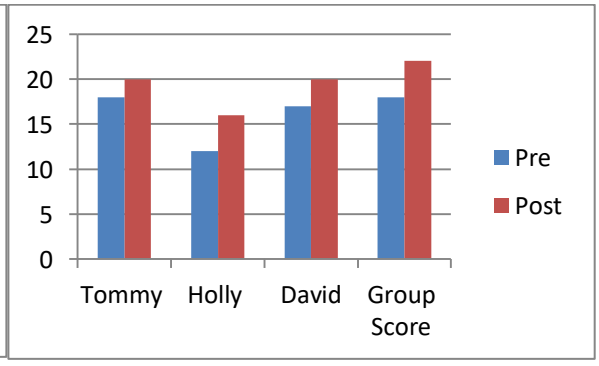


Table 8.4e

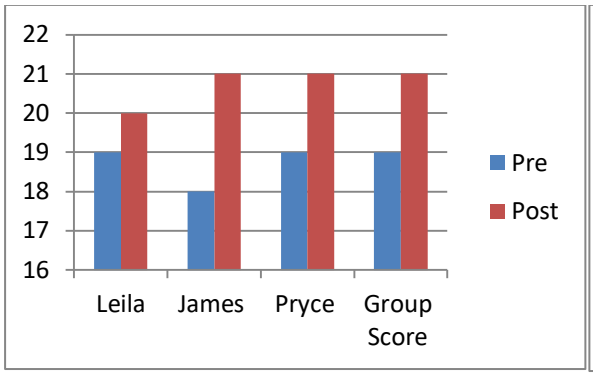


Table 8.4f

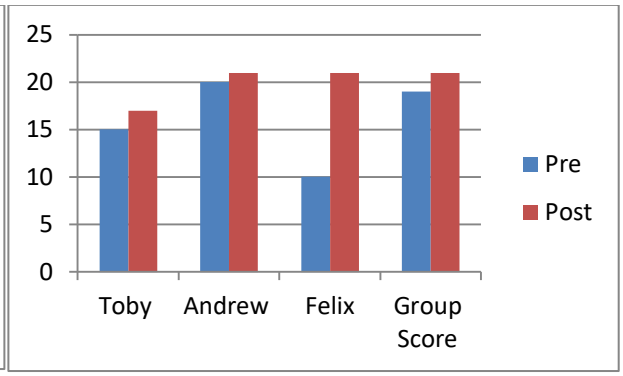


Table 8.4g

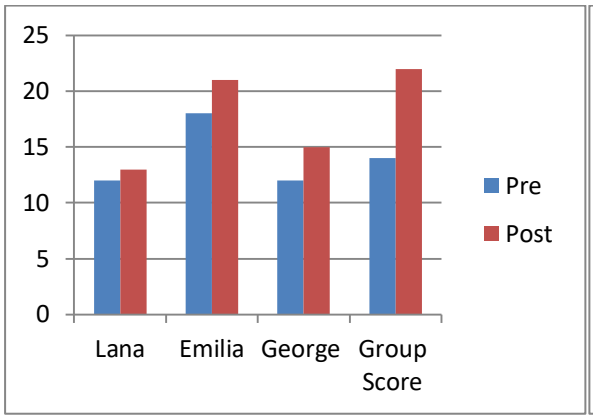


Table 8.4h

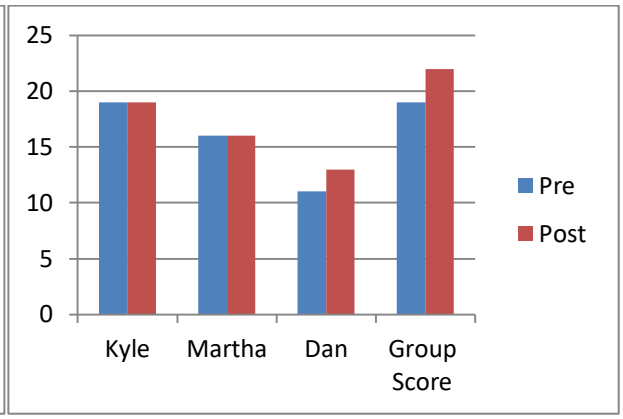


Table 8.4i

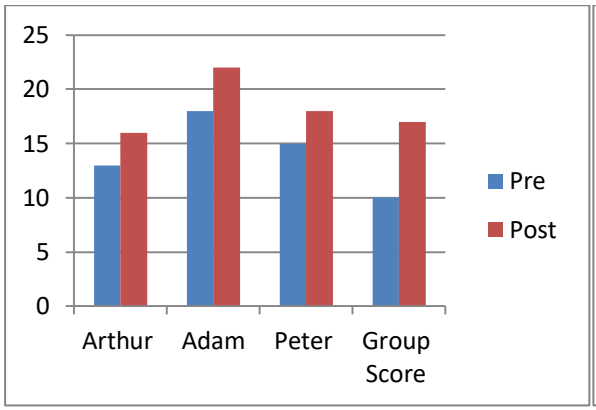


Table 8.4j

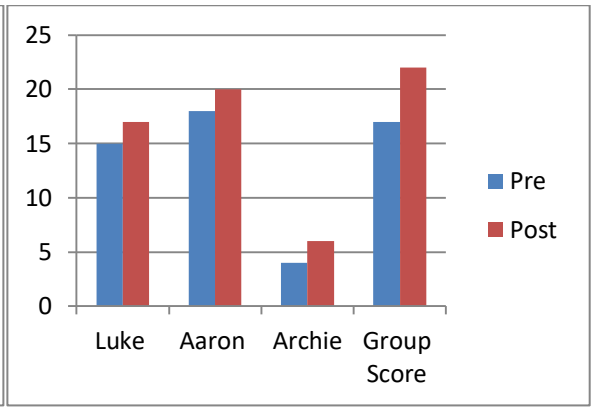
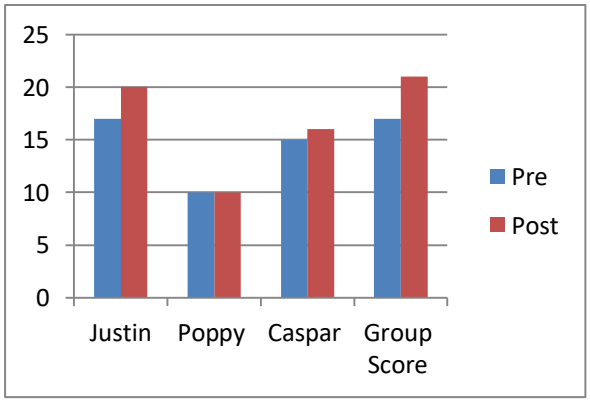


Table 8.4k



This table below shows the comparison of group scores to individual scores. According to Wegerif *et al* (2017), a group score which is higher than any individual's score can indicate that the collaborative thinking that takes place through dialogue in the group is beneficial.

Table 8.5. Group to individual score comparison

Group to individual score comparison	**Pre-test**	**Post-test**
Group score lower than that of the highest scoring member	5	3
Group score the same as that of the highest scoring member	5	2
Group score higher than that of the highest scoring member	1	6

In the pre-test, only one of the groups scored more highly than the highest scoring member, indicating that there was no value added to the group through group work discussion of the questions. However, in the post-test, there were six groups who scored more highly. This provides an indication that thinking in groups was more effective following the intervention, although not yet how this is the case.

8.4.1. Physical interaction with the paper: comparing successful and unsuccessful groups

As Wegerif *et al* (ibid) found in their work, in this study physical interaction with the paper was of significance. In successful groups, all children were engaged with the paper, demonstrating behaviour such as putting their fingers on the answers, drawing lines with their finger between question and answer, or counting patterns.

Image has been redacted

Figure 8.2. Tommy, Holly and David, post-test, table 8.4d

As can be seen from this image, all of the children are clustered around the paper and all have their fingers on the paper. In this particular group, Holly was the least vocal, but the most engaged with the paper itself, often drawing lines between question and answer. This group was successful in that the group score was higher than any individual score in the post-test.


Image has been redacted

Figure 8.3. Arthur, Adam and Peter, post-test, table 8.4i

This group chose to answer each question as individuals, using language such as "your turn". When one child was answering a question, the other two were disengaged from the paper. The numerical data shows that this was unsuccessful in the pre- and post-test in that the group score was consistently lower than the individual scores.

However, this data set by itself does not provide sufficient information for identifying aspects of the children's dialogue, or understanding how the children's dialogue may have changed pre- and post-test. In order to understand how the groups that were successful in group work came to be so, it was necessary to conduct a more detailed analysis of the transcripts.

8.4.2. Group strategies

When the test was administered, the children were sat side by side in their group of three, with one pencil and one paper placed in the middle. Children used a number of strategies to manage this:

- The paper was kept in the middle and the child in the middle held the pencil throughout. Children clustered around the paper.
- The paper was moved to different angles or to the left and right as children looked at the paper. The pencil was held by one child throughout

- The paper was kept in the middle, but the children took it in turns to hold the pencil, answering one question each
- The paper and the pencil were moved from child to child as each took it in turn to answer a question

The last of these strategies was generally the least successful, because the knowledge of the group was not shared. This can be seen in the case of Adam, Arthur and Peter (table 8.4i), who answered each question individually, using terms like “it’s my turn”, “it’s your turn” and showed little evidence of asking for each other’s input on ‘their’ question.

Children who were sat in the centre of the three sometimes took the role of leader, as these were the children who generally had control of the pencil, having the ‘final say’ on what was written down. There were instance in where group in which the child who was not the highest individual achiever was holding the pencil were more successful because the more able children, who might have realised the answer very quickly, had to explain their reasoning to others to convince them to write it down. In the course of this, sometimes the child realised that they were wrong, or another child in the group posed a different answer or a challenge to the given answer (e.g. Kyle, Martha, Dan, table 8.4h)

8.4.3. Detailed case studies of selected groups

These two case studies give a detailed analysis of a successful and unsuccessful group, examining the features of each group in closer detail.

Group 1: Kyle, Martha and Dan

The table below shows the individual and group scores pre- and post-test:

Table 8.6. Comparison of scores of Kyle, Martha and Dan

	Pre-intervention		Post-intervention	
	Group	Individual	Group	Individual
Kyle	18	19	22	19
Martha		16		16
Dan		11		13

A point of interest about this group is that their individual scores showed very little change, with Dan increasing his score by two marks, but the other two children not increasing at all. However, the group score increased from 18, which was a mark below the highest individual scorer. The post-intervention group score was 22, higher than any of the children achieved individually.

I conducted a detailed analysis of this group's patterns of dialogue in order to identify pre- and post-test differences. I conducted this analysis when both pre- and post-tests had been completed in order to have a side-by-side comparison of dialogue before and after the intervention. The first step in the analysis was to break down the analysis by question. First of all, I identified the turns which took place for each question.

Whilst carrying out this task, patterns of dialogue were emerging in the way that the children were answering the questions. Due to the nature of the task as a multiple-choice one, the dialogues for each question began with an initiation of an answer, sometimes preceded by some discussion of the nature of the question. I had expected that there might be more deliberation of the questions before answers were given in the post-test, but this was not the case. Even following the intervention, questions were almost always answered with an initiation of an answer initially, as in the pre-test. This was often presented in definite language, such as "It'd be D" or "It's going to be 1" (table 8.7, example language, questions 1 and 2 respectively), particularly in the pre-test. In the post-test, initiations were sometimes presented in speculative language such as "This one?" or "I think it's this one" (table 8.8). However, the more striking difference was not with how the initiations were made, but how they were responded to.

The first initiation was followed by either a corroboration of this answer, or by questioning it. If questioned, a new initiation could be posed, which was either corroborated or questioned, and so on. These moves could be accompanied by a justification of the move, in which children elaborated reasons either for posing an initiation in the first place, or for questioning or corroborating an initiation.

The following two tables show the turns, patterns of dialogue and example language from the pre- and post-tests For transcripts see Appendices 15 and 16.

Table 8.7. Detailed analysis of dialogue turns pre-test (Group 1)

Key

Children discussing question (unhighlighted) Initiation Question Corroborate New Initiation New Initiation and Justify Initiation and Justify Question and Justify Corroborate and Justify

Question number	Turns	Dialogue pattern	Example language
1	K	Initiate	It'll be D
2	K,D, K, M, K	Initiate – Corroborate	It's going to be 1 It' going to be 1 (repeated)
3	K, D and M, K	Initiate	So it'll be square
4	D, K	Initiate	It'll be that one
5	K, D, K	Initiate – Corroborate	So it's that then that
6	K, D, K	Initiate – New initiation	The one with 4, the one with 4 it should be
7	D, K, D, K, K, D, K, D, K	Initiate – New initiation – question – Corroborate (with justify)	Yeah that, because he's going to put it in, so that's going to be that one because he's writing
8	D, K	Initiate	This one, this one
9	M, K, D, M, K	Initiate – Corroborate	Yeah
10	D,K	Initiate – Corroborate	Yeah, yeah, yeah
11	K	Initiate	
12	D, K, D, K	Initiate – Question – Initiation (with justify)	Or it's this Or this Do this, because that's what their normal habitat is
13	D, K	Initiate	That
14	D, M, K	Initiate – new initiation	No, it's to that, it's to that, it's to that
15	K, D, M, D, M	Initiate – Corroborate	It's that one
16	M, D, M, D, K	Initiate	Would it be…
17	D, K, D	Initiate – Corroborate	It's the butterfly Yeah
18	D, K, D	Initiate – Initiation (with justify) – Corroborate (with justify)	No, it's this one because that's not one of the bears Oh yeah, because it's a dolly
19	K, D, K	Initiate – Corroborate (with justify)	
20	D, K and M, D, M, D, K, D, D	Initiate – Question – Corroborate (with justify) – New initiation – Question (with justify) – Corroborate (with justify)	Why do you think that? Because that one – Oh wait, that's the odd one out, because
21	K	Initiate	That one
22	K,M,K	Initiate – Corroborate	That one Yeah, that one
23	K, M, K, D	Initiate – Corroborate (with justify)	That one It's that one Because they're all
24	M and K	Initiate	That one

Table 8.8. Detailed analysis of dialogue turns post-test (Group 1)

Key

Children discussing question (unhighlighted) Initiation Question Corroborate New Initiation New Initiation and Justify Initiation and Justify Question and Justify Corroborate and Justify

Question number	Turns	Dialogue patterns	Example language
1	K,D,M, D, M, D, K, D, K, M, D, K, K, D, K	Initiate – Question (with justify) – New initiation – Question – Corroborate (with justify) – Question – New initiation – Question (with justify) – Corroborate (with justify)	No, cause… Really? Yeah, because he doesn't have any hair
2	M, K, D, K, D, M, K, D, M, D, K, D, K, M	Initiate – New initiation (with justify) – Question (with justify) – Corroborate (with justify) – New initiation – Question (with justify) – Corroborate (with justify)	This one because they drunk it Yeah, this one's a different cup so it should be this No but look at that, that's the same
3	D, K, D, M, K	Initiate – New initiation (with justify) – Corroborate – Question – Corroborate (with justify)	This one? It's A, this one. It's because that one has 3, then it should be 2 then it should be 1
4	D, K, M, K, K, K, D, M, K, M, D, K, D, D, K, D, K, D, K, M, K, D, K, D, M	Initiate (with justify) – Question – New initiation (with justify) – Question (with justify) – New Initiation (with justify) – Question (with Justify) – Corroborate – New Initiation (with justify) – Question (with justify) – Corroborate	It's that one, because that one doesn't have anything in This can't be it, because of the white one It goes with the pattern, so it has to be A
5	K, M	Initiate – Corroborate (with justify)	
6	K, M, K, M, K, M, K	Initiate – Question	Are you sure? Or it could be
7	D, M, D, M, K, M	Initiation (with justify) – Corroborate – Question – Corroborate (with justify)	
8	M, K, K, D	Initiate – New initiation (with justify) – Question (with justify) – Corroborate (with justify)	I think this because then it's – no wait, no, it isn't that one, I apologise, it's this one because there are 4 of these
9	D, M, D, K, M	Initiate – new initiation – Question (with justify) – Corroborate	No, that goes with that, because look, he's got that

10	K, M, D, K, D	Initiate – New initiation (with justify) – Corroborate	I think it's this one It needs that one because it's a matching shoe
11	K	Initiate	
12	M, M, D, K, M	Initiate – Corroborate (with justify)	It's that It goes with that
13	D, K, M, K	Initiate (with justify) – Corroborate (with justify)	It's the spoon because I figured out that it's not sharp
14	D, K, M	Initiate – Corroborate	
15	D, K, M, K, M, D	Initiate – Question – Corroborate (with justify)	That one's the odd one How? Cause look, it's the only one facing down
16	K, D, K, D, K, M, K, D	Initiate (with justify) – Question – Corroborate (with justify)	Why? Because they're like cake
17	K, D, K, M, D, M, D, K, D	Initiate – Question (with justify) – Corroborate (with justify)	Oh, it can't be the colour, can it? Oh, is it that? That's a pattern, and the other ones aren't
18	D,K,M,K	Initiation (with justify) – Corroborate (with justify)	It's going to be that one, because it doesn't have a pattern on it
19	M, D, K	Initiate – Corroborate (with justify)	Seaweed, because the other ones are animals
20	D, K, D, M, D	Initiate (with justify) – Corroborate (with justify)	That one, sheep, because the other ones are dogs
21	M, K, M, K	Initiate – Question (with justify) – Corroborate	Um, that one? It's this one, because you can see
22	K, D, M	Initiate – Corroborate	
23	D, M, K, M, D	Initiate – Corroborate (with justify)	Yeah, the club, because there's only one club
24	K, M, K, D	Initiate – Corroborate (with justify)	

Having determined the nature of the turns which took place, these were then compared in the pre- and post-tests:

Table 8.9. Categories of turn identified

Category	**Pre**	**Post**
Initiation	27	18
Question	4	12
Corroboration	15	26
Initiation and justify	3	6
Question and justify	1	17
Corroboration and justify	6	30
New initiation	4	9
New initiation and justify	0	7

The dialogue moves were then identified per category, per child:

Table 8.10. Number of moves per category, per child (Group 1)

Category	**Pre**				**Post**			
	Dan	Martha	Kyle	Total	Dan	Martha	Kyle	Total
Initiation	5	6	16	27	5	6	7	18
Question	3	0	1	4	4	4	4	12
Corroboration	6	5	4	15	8	10	8	26
Initiation and justify	1	0	2	3	4	1	1	6
Question and justify	0	0	1	1	7	2	8	17
Corroboration and justify	3	1	2	6	8	8	14	30
New initiation	0	0	4	4	2	4	3	9
New initiation and justify	0	0	0	0	1	1	5	7
Total	18	12	30	60	39	36	50	125

There are some striking differences in the pre- and post-test findings. The number of justifications increased considerably across all categories, particularly in the category of corroboration and justify. In the pre-test there were six instances of this category, and in the post-test this had increased to 30. Number of initiations was the only category which decreased, but this was more than matched by new initiations and initiations with justification, making a total of 43 initiations of all types post-intervention compared to 34 before.

Initiating

The total number of talk instances increased from 60 before the intervention, to 125 after. All of the children have contributed more in the post-test than in the pre-test, but the distribution of contributions has changed post-intervention. The three children in this group all initiate more equally than in the pre-test:

Table 8.11. Instances of initiating in the pre- and post-tests

Total Initiations	**Pre**	**Post**
Dan	6	12
Martha	6	12
Kyle	22	16

In the pre-test, the initiations in this group were dominated by Kyle, initiations which were often corroborated by one of the other two. These corroborations

generally took the form of unjustified brief statements such as “Yeah” or “It’s that one”, as can be seen in the example language from questions 9, 10, 22 and 23 in table 8.7. These questions were sometimes answered wrongly because children did not examine the answer that was posed.

By contrast, in the post-test, the initiations were much more evenly distributed between the three children, and Kyle took a more active role in corroborating, with justifications. When one of the other children initiated an answer, Kyle, who scored most highly in the individual tests, was able to provide a reasoned justification for the answer which was a successful strategy in correctly answering questions.

Questioning

Another important feature in this dialogue is that the instances of questioning increased considerably after the intervention, shown in the table below:

Table 8.12. Instances of questioning in the pre- and post-tests

Category of Questioning	**Pre**	**Post**
Questioning	4	12
Questioning with justify	1	17

The questioning was not always detailed, and in several instances called upon the initiator to explain their reasoning. Examples of language are: “Really?”, “Why?” “How?” and “Are you sure?”. This type of language was noticeably lacking from the pre-test. Questioning resulted in an increased number of turns per question, as children then responded to the doubt cast upon their initiation by explaining their reasoning to others.

There are some features of language which were unexpected, such as the number of turns which were of less than three words. Cazden (2001) had indicated that this indicated a lack of in-depth discussion, however this example indicated that this was not an adequate predictor of how well the children were able to answer the test questions. This partly accords with the view that dialogic discourse does not preclude IRF-type discourse, as the two can co-exist (e.g. Dombey, 2003). There were times when a single word, such as in the examples given above, was sufficient

to question what had been said, but this is not a strategy which can be relied on when the question is harder for children to answer.

Group 2: Arthur, Adam and Peter

The table below shows this group's pre- and post-test scores:

Table 8.13. Comparison of scores of Arthur, Adam and Peter

	Pre-intervention		Post-intervention	
	Group	Individual	Group	Individual
Arthur	10	13	17	16
Adam		18		22
Peter		15		18

They scored less highly than the highest scoring individual in both the pre- and post-test, and were the only group not to score at least as highly as the highest scoring individual in the post-test. However, their individual scores all increased in the post-test, and their group score did increase considerably from the pre-test. The increase in individual scores indicates that their individual reasoning ability has increased, but this is not evident in their group work. The table below shows the dialogue analysis of the post-test. I have not included the pre-test transcript because it was conducted mostly in silence.

Table 8.14: Detailed analysis of dialogue turns post-test (Group 2)

Children discussing question (unhighlighted) Initiation Question Corroborate New Initiation New Initiation and Justify Initiation and Justify Question and Justify Corroborate and Justify

Group	Question number	Turns	Dialogue pattern	Example language
Adam, Arthur, Peter	1	P, Ar	Initiate - Corroborate	Is it this? Yes
	2	P, Ar, Ar, P	Initiate and justify – corroborate and justify – new initiate – new initiate	Because like everybody puts sugar in their tea It's that one
	3	P, Ar, Ar	Initiate – Corroborate and justify	It's A It's smallest to biggest
	4	A	Initiate	It's that one
	5	P, P, Ar, P	Initiate and justify – Corroborate	It's this one, because cap goes to head
	6	A, Ar	Initiate – Corroborate	It's A isn't it. Yeah
	7	Ar	Initiate	

	8	P	Initiate	
	9	Ar	Initiate and justify	
	10	P	Initiate and justify	So this'd be that one, it's that one. Because this and this wraps it up to make this, so this wraps up to make that
	11	P, Ar, P, Ar, P	Initiate – Corroborate and justify	
	12	Ar	Initiate and justify	
	13	P	Initiate and justify	This one, cause it's not in the pattern,
	14	Ar	Initiate and justify	The odd one out is that one because it's looking down
	15	P, Ar	Initiate and justify – corroborate	
	16	Ar	Initiate and justify	It's that one because it's big small big small
	17	Ar, P, Ar	Initiate and justify – Corroborate	This one because it has a pattern on the bottom Oh yeah
	18	P, Ar	Initiate	
	19	P	Initiate and justify	
	20	A, P, Ar	Initiate – Corroborate and justify	That one Yeah
	21	P	Initiate	Line, it's a line
	22	No dialogue		
	23	P, Ar		
	24	P, Ar		

This table shows how many turns in each of the categories each of the children made:

Table 8.15: Number of moves per category, per child (Group 2)

Category	**Post**			
	Adam	Arthur	Peter	Total
Initiation	3	3	4	10
Question	0	0	0	0
Corroboration	0	7	2	9
Initiation and justify	0	5	6	11
Question and justify	0	0	0	0
Corroboration and justify	0	3	1	4
New initiation	0	1	1	2
New initiation and justify	0	0	0	0
Total	3	19	14	36

The total number of turns for this group was 36, compared to 125 total contributions for the successful group. There were a number of instances where the non-verbal dialogue category was an individual “looking at the paper in silence” (see transcript, Appendix 16). The category with the most number of turns was initiation and justify, which may correspond with the increased individual scores. The individual members of this group could initiate an answer and give their reasons for doing so, however, a there were a number of instances in which this constituted the only turn when a question was answered.

What was striking was that there were no instances of questioning at all: when one child initiated an answer, the others in the group either did not respond at all, or corroborated it often with a single word, such as “yeah” (Example language, questions 6, 11, 17, table 8.14). One of the group, Adam, contributed particularly little, and yet his individual test score was the highest. It is clear that he did not make his reasoning available to others during the course of the group test.

In both the pre- and post-tests, this group took the strategy of passing the paper and pencil between each other, each answering a question in turn. However, whereas the pre-test was conducted in near silence, with each child appearing to view the question as their own, in the post-test there are examples of the others in the group contributing. In this respect, although the group is unsuccessful in terms of the scores, the group is beginning to demonstrate an engagement with group thinking. Yet this group does provide an indication that even where children are individually able, if they cannot articulate their thinking this will be of detriment to group work tasks. This also serves as a caution to the classroom practice of putting more highly attaining students in groups with lower attaining ones because high attainment in a particular curriculum subject does not translate to the ability to share one’s thinking in that subject with others. Teachers would therefore need to consider which children are competent in their subject *and* are good at articulating that to others before considering group composition.

8.8.4. An example of what a group's 'success' means.

This example considers the video analysis of Justin, Poppy and Caspar's group. The comparison of their scores is shown below, with details of their pre- and post-dialogue in table 8.16.

Table 8.16. Comparison of scores of Justin, Poppy and Caspar

	Pre-intervention		Post-intervention	
Group	Individual	Group	Individual	Group
Justin	17	17	21	20
Poppy		10		10
Caspar		14		16

Table 8.17. Number of moves per category, per child (Justin, Poppy, Caspar)

Category	**Pre**				**Post**			
	Justin	Poppy	Caspar	Total	Justin	Poppy	Caspar	Total
Initiation	17	2	3	22	5	4	4	13
Question	1	0	1	2	2	1	1	4
Corroboration	1	0	0	1	2	2	4	8
Initiation and justify	2	0	0	2	7	0	2	9
Question and justify	0	0	0	0	2	0	1	3
Corroboration and justify	0	0	0	0	1	2	1	4
New initiation	0	1	1	2	1	1	1	3
New initiation and justify	0	0	0	0	0	2	2	4
Total	19	5	5	29	20	12	16	48
Example language	J: It should be that one. Pick A. C: I'll pick D P: I bet it's that one				J: Poppy, talk C: I can do it			

This group provides an example of how labelling groups as 'successful' or 'unsuccessful' based on whether or not their overall group score is higher or lower than that of the highest scoring individual can be reductive. As shown in table 8.4k, this group was deemed 'successful' because their group score was higher in the pre-test but not in the post-test. However, it was only one mark higher than Justin's score, and so this is not especially useful data. Transcribing and analysing the dialogue, however, provided much greater indication of how this group approached

the test. Justin was the most successful individual member of the group in the pre- and post-test, and showed the greatest improvement. Caspar's score increased by one mark between the tests, while Poppy's score was low, at 10, and did not increase in the post-test.

In the pre-test, Justin was clearly in control of the group, making 19 of the 24 initiations, despite the group's strategy of passing the pencil and test to each child in turn to answer a question. Justin would often lean over the paper and look over the answer options before saying "it's that one". The child with the pencil would then circle the answer Justin had indicated. This was the pattern for almost all of the questions, and can be seen by the very low number of new initiations, questioning and corroboration. This was particularly the case each time it was Poppy's 'turn', as she was clearly finding the questions more difficult. Justin would often tell her which answer to circle with no justification. When Poppy did suggest an answer, it was guesswork: "I bet it's that one". Justin's strategy did not always work with Caspar though, for example when he told Caspar "it should be that one. Pick A", Caspar immediately replied with "I'll pick D". He offered no justification for this, neither did Justin question it, possibly because it was not 'his' question.


Images redacted

Figure 8.4. Images showing Justin initiating answers when it was another child's 'turn'

However, this pattern had altered in the post-test. This was particularly evident in the way in which Justin related to Poppy. Although he went through the answer options with her, he did not then pose a solution, but waited for her to do it. He also encouraged her to verbalise her thinking. This meant that she made many more initiations. This can be seen from the numerical description in the table, where both Poppy and Caspar made more initiations and Justin made fewer. Also, although Justin made more initiations overall than the other two, this was predominantly in the category of 'initiation and justify" because he was explaining to the others why he

had made a particular choice of answer. This then drew the others into the group reasoning, and they were beginning to corroborate and question initiations, including providing justifications. Even in the post-test, Caspar was not always responsive to Justin's contributions, saying "I can do it" at one point when Justin tried to point out an answer. Caspar was something of a 'wild-card' in the group tests, with his attention often not on the test. His increased engagement with other's contributions in the post-test was an improvement for him, even if this was not sustained throughout.

Figure 8.5. Images of Caspar's wandering attention Images have been redacted

This example shows that the group's success was only superficially based in scoring for their test. The variation in the roles that the children took increased considerably, with initiations and overall contributions made more evenly across the group. Justin stepped back from providing all of the answers so that another group member who was obviously less strong in this task could contribute. Although the group score was only one mark higher than Justin's individual score, it is clear from the variation in the roles that the children took that the post-test was much more of a group endeavour than in the pre-test.

8.5. Discussion

The discussion integrates the two research sub-questions into the overarching research question:

How can a teaching-and-learning intervention support primary age children of six- and seven-years old in England to begin to demonstrate dialogic thinking in whole-class and small-group contexts?

The findings indicated that variation increased in terms of the strategies employed and the roles taken within the group. The following sections discuss these aspects of the findings. This section then concludes with the production of dialogic thinking map and a consideration of how this could be utilised in classroom dialogue teaching.

8.5.1. Strategies for answering questions increased in variation

The detailed analysis of the findings does not imply that each question answered correctly was done so in a way which necessitated a specific combination of initiation – question – corroboration. Many of the correctly answered questions both pre- and post-test were done so in a way which was of the initiate–corroborate format, sometimes only including two or three turns. This was because children 'got it' very quickly, and more than one child in the group could see that the answer posed was correct.

However in the pre-tests, this strategy was relied upon much more. If one child initiated an answer, the others in the group were much more likely to agree to it. The dialogue moves in the post-test showed much greater variety, depending on the complexity of the question and whether or not it was quickly understood by none, one or more than one of the others.

8.5.2. Variation in distribution of roles increased

In addition to the variety of dialogue patterns, the variety of roles within these patterns was also greater. The initiate–corroborate strategy tended to be instigated by one of the parties, with one of the others taking the role of corroborator. However, in successful post-test groups, these roles were much more even distributed between the three. This implies that there was no one 'natural leader' and the children did not approach the task in terms of fixed roles, but in terms of the process. Where one child thinks they know an answer, they initiate, but also include justification to make their thinking clearer to others. Others, where they are not certain, question this, because that is what is needed at the time. Lipman (1991) described this as 'they come to think as the process thinks' (p.16); Burgh, Field and

Freakley (2006) also write that ‘participation in a Community of Inquiry ‘strengthens commitment to the process of inquiry’ (p.121). Instead of an individual response to a question, the dialogue patterns in the post-test indicate that, in order to correctly answer a question, the process of inquiry incorporates certain moves which are made by whichever child is in a position to do so at the time.

These findings indicate that an approach to classroom dialogue in which each child must take a specific role might not be helpful for instigating true dialogic thinking. Michaels, O’Connor and Resnick’s (2008) concern was that seemingly competent partakers in dialogue could emulate dialogue moves and use the language of dialogue, but in reality they are not participating in true dialogue because the contributions of the group do not matter. This was a pervasive occurrence in their research findings.

8.5.3. Transference of dialogic thinking between contexts

These findings indicate that transference of dialogic thinking skills and dispositions did occur between the whole-class discussion-based context and the small-group closed-ended question context. This section considers how transference between contexts can occur, and suggests some implications for pedagogy. A consideration of this ought to be explicit rather than assumed according to Bereiter and Scardamalia (2018), who write that the “burden of proof ought to be on thinking skills advocates to demonstrate that the effects of skill teaching transfer to significant real-world behaviour” (p. 83).

Although the previous two iterations gave indications that teachers perceived a development in dialogic thinking skills and dispositions in their classes, as well as an impact of their own teaching, it was unclear whether or not the whole-class discussion sessions would make a difference to small group work. This is because there is little research on whole-class dialogic teaching compared to peer dialogue in group work (Howe and Abdein, 2013; Howe, Hennessy and Mercer, 2020). In particular, it is not clear how much the dominance of teacher discourse changes as a result of dialogic pedagogy, although the indications from the second iteration are that teachers adopted a more “dialogic stance” (Wells and Arauz, 2006).

Schank and Abelson (1977) described a restaurant schema: when one visits restaurants, one assembles a knowledge structure about restaurants (how to behave, which actions to carry out in which order, and so on). Then when one visits a different restaurant, one is able to utilise this schema to be able to navigate the context. Argumentation schemas, such as those proposed by Toulmin (1958), contain elements such as “claims, reasons, warrants, counterarguments, and rebuttals” (Reznitskaya et al, 2012, p. 289). Reznitskaya et al also point out that these elements are supported by “general epistemological beliefs about knowledge and knowing” (p. 289).

The transference between contexts indicates that The Playground of Ideas engaged children in the epistemological schema of pragmatism. Pragmatism is the epistemic foundation of the Community of Inquiry, which is conceived of as the engagement in the process of doubt about knowledge claims. Knowledge is held tentatively, and claims are questioned and reformulated. The Playground of Ideas introduces children to the mechanisms by which this process is formulated, for example by encouraging changes of opinion and giving reasons for one’s claims; providing language structures for agreeing and disagreeing (the Climbing Frame) and activities in which children are provided with a structure to recognise stronger and weaker claims (the Seesaw). In addition, the Lookout Tower provides the opportunity for meta-level reflection on the process of discussion, which is recognised as a requirement of a Community of Inquiry (Burbules, 1993; Lipman, 1991; Splitter & Sharp, 1996).

However, although knowledge may be held tentatively in a pragmatist schema, in a closed-ended task such as the test which the children in this study took, it should be considered that there was a right answer to be reasoned. There was a clear example of this in the post-test transcript of Tommy, Holly and David’s group. The question was asking what comes next in the sequence, and consisted of a blank flag, followed by a flag with one diagonal line, the a flag with a diagonal cross in a repeating pattern. The children had to select from four answers, and the correct answer was a picture of a flag with one diagonal line. The transcript below shows the group attempting to answer one of the questions:

Table 8.18. Excerpt of transcript from Tommy, Holly and David post-test

Time	Name	Verbal dialogue	Non-verbal dialogue
08.55	T	So it goes cross, blank one out, that one, cross, blank one out, so it's definitely that one, before the cross	Points to pattern to show single line before cross. Circles answer
The group move on to another question, but then return to this one			
09.31	D	We should have circled D	D goes back to the previous question to check that F has done it properly, after realising that he thought it was still the odd ones out.
09.34	T	No, blank one, one. Look, one, cross, blank one out, one, cross, blank one out, one cross, blank one out, so it's that one	
09.44	D	But Tommy, it's not like that, we do the one on here, so it has to be that one	
09.49	T	It can't be, it's not two crosses, is it.	
09.54	D	No, but the first and the second one, which one comes next, circle the letter. So it has to be that one	D points to answer 'D', the cross.
10.04	T	It can't be. Cause it's adding up to be a cross. Cross, blank, line, cross, blank, line, cross.	Points across at the different images and then to the answer to complete the pattern
10.17	D	Holly, what do you think?	
10.19	H	So you've got that line, cross, blank, line, cross, blank. Line, line	H points to answer 'D', the same that T is suggesting
10.28	D	No, but which one comes next circle the answer, so it must be this one	
10.35	T	It can't be	
The group move on to another question, but David again returns to this one			
11.19	D	Can you just let me work this one out. Line, cross, blank, line, cross, blank, line	M wants to return to the previous question with the lines and the crosses. He points to each image, repeating the pattern.
11.30	T	There, I told you	

Tommy takes it upon himself to answer the question by himself in the first instance, although he does explain why he has chosen the answer, which is correct, both verbally and non-verbally. He moves on very quickly, but David is not clear on the answer and wants to return to the question, which he does twice more. He questions Tommy's answer five times, and asks Holly for her opinion. Tommy has worked out the correct answer, and gives a good explanation at one point: "It can't be. Cause it's adding up to be a cross. Cross, blank, line, cross, blank, line, cross".

Tommy rejects all of David's questioning, and it is understandable because he has reasoned the correct answer. In this case it would not be effective to continue to reason, although he does demonstrate dialogic thinking by continuing to justify his answer to the group.

Lewens (2015) highlights this point in respect to scientific inquiry, that there is a tension between community inquiry and a single-mindedness which disregards other views which scientists have at times demonstrated to advance scientific understanding. I think this is a key point when considering that, in a pragmatist schema, one cannot "doubt everything all at once" (Pardales and Girod, 2006, p. 300). Tommy demonstrates a lack of willingness to change his mind in this episode, however it does not indicate that there is a lack of dialogic thinking, but rather that different approaches are required at different points in the inquiry: sometimes accepting the questioning of the group and sometimes putting forth one's own viewpoint quite forcefully. The next section considers this point and the other findings with regard to Buber's work.

8.5.4. The findings in the context of a Buberian dialogic approach

This section considers the variation in strategy and roles through the lens of Buber's dialogic approach. Although some of Buber's writing is not explicitly pedagogical (or particularly easy to read with an education focus), for example *I and Thou*, there are other examples of his work which pertain much more to a specifically educational context, such as the "Education" chapter of "Between Man and Man". Buber also wrote specifically on the educative relationship between teacher and student. As Kramer (2013) writes, 'For Buber, the objective of education is the transformation of the ways in which people interact with each other' (preface). This transformation is one in which interaction becomes less determined, so that people in dialogue are open to the other. Without it, there is no possibility of true dialogue.

The increased variation in roles taken in the testing indicates that children are less likely to conform to expected roles, which is an important indication that an I-Thou relationship could occur, as "any kind of preconception, expectation or systematization about the Other prevents the I-Thou relationship from arising"

(Guilherme and Morgan, 2017, p.10). This was also seen in the findings from Iteration 2, where teachers reported that the Playground of Ideas sessions allowed certain children to be seen as more competent compared to the usual classroom activities. In departing from traditional curriculum content, and from writing, children and their teachers have the opportunity to see others differently, and it is this lack of finalisation which opens up the possibility for dialogic interaction.

Finalisation is also a Bakhtinian concept, what Bakhtin (1984) considered to be a moral issue because one person has been so completely defined by another that there is not any possibility that the other can enter into dialogue as an autonomous consciousness in their own right – and therefore that either party can enter into the infinite possibilities of dialogue. In the pre-test analysis, there were more indications that the dialogue is already pre-determined by the relation in which the participants in dialogue have to each other. White (2014) argues that this is how the principles of relationships in Western educational structures are organised in an educational model where progress, results and attainment are a sought-after ideal. This has long been criticised by those within and outside of the PwC world, who see such an instrumentalised form of education as detrimental to children, their teachers and society in general. For example, Vansieleghem and Kennedy (2012) write that "the regressive, instrumentalist structure and discourse of 21st century Western traditional schooling is understood as particularly antithetical to the goals and purposes of philosophy for children" (p. 8). PwC is therefore seen by many as a way of overcoming such tendencies, reducing teacher talk (Topping and Trickey, 2014) and allowing children to interpret the world on their own terms rather than being considered as deficient not-yet ideal adults (Murris, 2016).

However, Guilherme and Morgan (2017) suggest that in the dialogic classroom "the teacher sets a sort of value platform for the student, but this does not mean that the student's interests, creativity and needs are set aside, as the student develops these within the framework set by the teacher" (p. 16). What is more important than the content of learning is the relationship between the teacher and the student, because the teacher provides the guidance for students, while still relating to them as autonomous beings. There were indications of this in teachers' attitudes toward the children in their classes in the second iteration, where they came to regard the children in a different way as a result of the Playground of Ideas sessions. A dialogic

pedagogy, therefore, can be seen as “implicitly a critique of, or a re-education in regard to, our taken for granted assumptions about ourselves and others” (Tubbs, 2005, p.109).

In this study, there were elements of finalisation in the pre-tests in the ways in which the participants related to each other, often taking pre-defined roles in the dialogue, for example as initiator. The larger dialogue in play, beyond the dialogue specific to any one question, was the one of relation. In the post-tests of successful groups there were indications that no one child viewed themselves or each other ‘as’ (implying finalisation) a particular role, but rather the roles were more flexible, and therefore the strategies for using dialogue to answer the questions were more flexible. After the initiation of an answer, a number of responses are possible, in what Maine (2015) describes as the “dialogic space of possibility” (p. 20). With a Buberian analysis of oscillation, one enters the dialogic space of possibility to pose a response, but when that response is posed, that space of possibility is no longer occupied. At this point, one can either pose another response, in which case the “dialogic space is re-entered” (p. 20) or can accept a given answer and that is recorded. Maine further draws on Paul (1987) to suggest that there is a dialogic space of possibility between ideas and responses (p. 21). In the group work in this study this was mostly seen between more than one child in a group, but there was an occasion when a child (Kyle) initiated an answer but then questioned it himself: “I think this because then it’s – no wait, no, it isn’t that one, I apologise, it’s this one because there are 4 of these”. His apology to the group is quite touching as he navigated between his own idea and response.

My conclusion is that the increased variation in the strategies to answer questions in the group work comes from the increased variation in roles. Therefore the possibility for a true dialogic relationship is at the core of successful group work, enabling a multiplicity of roles based on flexible role-taking depending on context. One of the conjectures that I had was that Buber’s conception of dialogue as an oscillation between I-Thou and I-It relationships would be a helpful one when researching dialogue in the classroom, and these findings support this conjecture because it was clear that, at times, children were at times keen to propose their own ideas and convince others that they were correct, but then at other times were considering the ideas of the group community and subsuming their individual

identities to the group. The example of Tommy, Holly and David's group (tale 8.18) indicated how Tommy felt the need to be 'single-minded' when he knew the right answer and had explained his reasoning to the group, as well as having the support of the third member in the group. Although David questioned Tommy several times, returned to the question twice more and asked the other member of the group to give their opinion, Tommy did not change his answer, although he exercised great efforts to explain his reasoning to others. The next section considers oscillation and its application to education practice in greater details.

8.5.5. How to consider Buber's dialogic theory in terms of education practice

Many explanations of dialogue have been given through a constructivist lens. For example Littleton, Mercer, Dawes, Wegerif, Rowe and Sams (2005) define exploratory talk as that which demonstrates the "active joint engagement of the children with one another's ideas" (p.169), and that this indicates successful group work compared to disputational talk and cumulative talk, the former of which is too critical and the latter not critical enough. These authors interpreted their findings through a sociocultural lens, in which exploratory talk is a social mode of thinking through which participants successfully engage in educational discourse.

In a constructivist framework, this approach has been called scaffolding, where the teacher "enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (Wood, Bruner, & Ross, 1976, p. 90). As the more knowledgeable, the teacher takes the role of guide as the child encounters new learning and provides support during this phase. Van de Pol, Mercer and Volman (2018) highlight that the scaffolding metaphor is usually linked to Vygotsky's sociocultural theory, in which learning takes place in a social setting initially, it becomes internalised. A sociocultural explanation of the transference of dialogic skills between contexts has also been given (Reznitskaya et al, 2012) in which the cultural tools (Vygotsky, 1978) of argumentation schema engaged with in groups becomes internalised for the purposes of individual work such as argumentative writing or individual reasoning. In this view, dialogic classrooms are seen as "a training ground for the development of rationality in individuals" (p. 290).

As Biesta (2011) points out, constructivism, in its many forms, has been a shaping force of pedagogy in the modern classroom. The cognitive constructivism of Piaget and the social constructivism of Vygotsky are mainstays of teacher training courses, mine included. White (2014) also reinforces this point: Vygotsky has found what has seemed to be a lasting place in education systems because his ideas are "explicitly pedagogical" (p. 221). This is a traceable path between classroom features and individual student performance, as shown in Reznitskaya's *et al* (2012, p. 290) diagram:

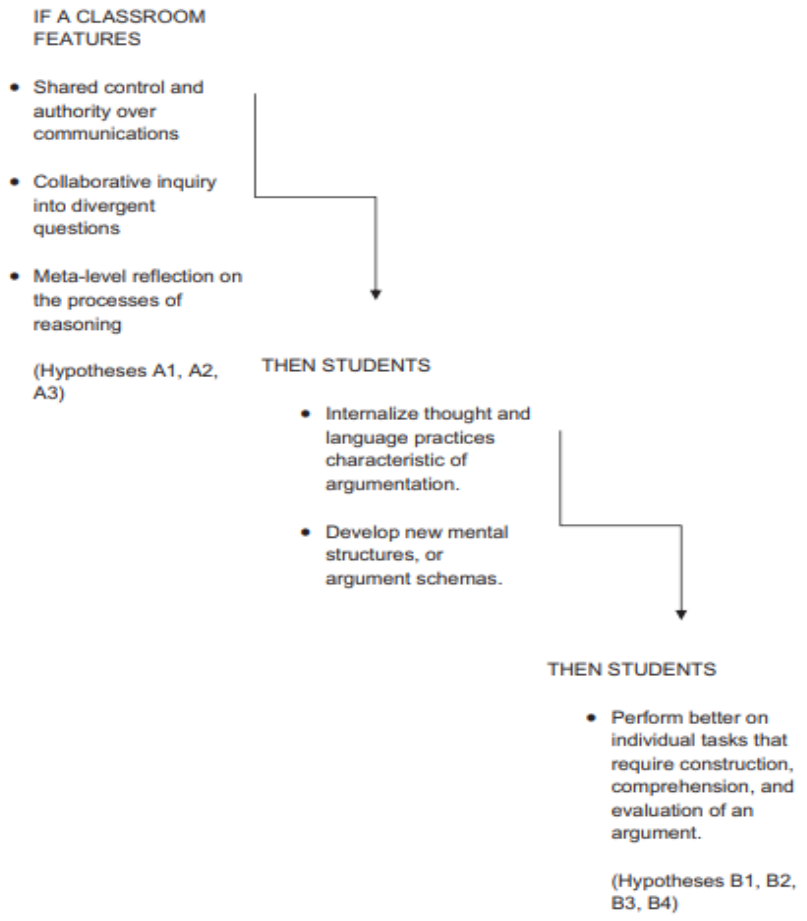


Fig. 1. Dialogic teaching and learning: theoretical principles.

Figure 8.6. Vygotskian principles of dialogic teaching and learning

However, the aim of this section is to consider how Buber's dialogic approach can be presented in educational terms which are practicable to teachers and learners. Vygotsky's Zone of Proximal Development has the advantage of being an easy-to-understand diagramised concept, and quite often this is all that is presented of his work to trainee teachers as shorthand for all of his work. Although it is easy to

bemoan this, it is a necessary feature of time-pressured teacher education. If there is to be a move away from dialogue through a constructivist lens and toward a Buberian one, it should be presented to teachers in ways which can be easily understood with little input.

There are challenges to this. As has been shown, a true dialogic relationship is seen as unquantifiable: this is not helpful for educational practice or the research into it. This section therefore goes on to consider how Buber's thinking could better be conceptualised in the language and mode of education practice.

Repeatedly, studies into classroom dialogue report that "dialogic spells" (Nystrand *et al*., 1997, p. 149) are rare and inconsistent. Other studies report that dialogue appears to be instrumentalised (Michaels, O'Connor and Resnick, 2008; Biesta, 2011). If this is the case, especially given all that is known about dialogic classrooms and all of the teaching resources available for dialogic pedagogy, then why is this the case? A sociocultural explanation should indicate that students engaging in classroom dialogue follow the same patterns as with other aspects of learning, such as literacy and numeracy. There have been recent attempts by the Oracy Centre at Hughes Hall, Cambridge to systematise oracy in terms of levels of expected achievement by students of different ages, but oracy is not dialogue, encompassing as it does all forms of spoken communication, including those which are self-purportedly monological.

Perhaps the reason that is difficult to identify moments of dialogue in the classroom is the multi-layered nature of the dialogic relationship. True dialogue is not just the words that are said at a particular time for a particular reason. There are ontological and epistemological considerations also, as were described in the literature review. It is for this reason that I am claiming that a Buberian approach to dialogic thinking is the most appropriate one because it is explicit that dialogic relationships continually oscillate between the I-Thou and the I-It. Buber expects that any relationship can never remain an I-Thou one because such relationships are rare and fleeting, which is indicative of classroom research even where dialogic pedagogy is taking place. However, once we have experienced I-Thou relationships, writes Buber, even when we are no longer experiencing them, we know what to look for and are keen to find such a moment again.

Therefore, the aim of the dialogic classroom is not to aim for dialogic I-Thou relationships all the time, but to set up an environment where such relationships could occur and once they have occurred, to keep on providing opportunities in which they might come about again. What should be part of a dialogic pedagogy is how teachers can do this: what to expect and what not to expect. This should be presented in a format which teachers (or non-specialists of dialogue) can easily access, and to start with I propose that a practitioner formation of dialogic thinking could be presented with an expanded conception of oscillation.

In classic Buberian terms, the oscillation is between the I-Thou and the I-It relationships, but it is also necessary to consider what this abstract concept might look like in the concrete setting of the classroom, to begin to understand what a Buberian dialogic pedagogy could look like by considering how aspects of pedagogy can also be viewed through a two-fold lens. Oscillation requires the movement between two different (or even opposing) positions (such as differing concepts of a term or relational interaction).

Guilherme and Morgan (2017) write that from a Buberian perspective, education has two distinct but interconnected layers. These consist of an outer layer concerned with knowledge transfer and skills and an inner layer concerned with the development of character and relationships with others. This has been observed in the characteristics of dialogic thinking, which is why developing the competencies of dialogic thinking has been referred to in terms of skills and dispositions. Similarly, definitions of critical thinking presented in the literature review presented critical thinking as an interplay of skills and dispositions, where critical thinking is perceived not only as an individualistic pursuit of reasoning but also as a relationship between those doing the reasoning.

The difficulty lies in understanding not how these different layers are constituted, but how they are navigated. Many studies into classroom dialogue highlight specific examples of the types of language which are indicative of reasoning, but having analysed samples of classroom dialogue using the Cambridge Discourse Analysis Scheme (CDAS), Lefstein and Snell (2020) identify limitations in this method of analysis. The CDAS scheme (Vrikki, Wheatley, Howe, Hennessy, & Mercer, 2019) contains categories such as “reasoning invitations” “querying” and “reference to

wider contexts" (Lefstein and Snell, p. 70). Lefstein and Snell claim that this type of analysis gives some indication of the exchanges that are taking place but do not provide information about the social contexts of learning. They re-analyse the classroom dialogue episodes, taking a linguistic ethnographic approach in which "learning and identity processes are intertwined" (p.70) by examining the dialogue in conjunction with the social roles that the participants play in the classroom. Their conclusions were that participation in classroom dialogue was heavily influenced by identity factors, and that pupils who feel "authorized to contribute" (p. 73) are more likely to do so, and do so in productive ways for collaborative reasoning.

The Playground of Ideas focuses on ways of ensuring that more children in the class feel authorised to participate. The Swing was one example of this, but the Slide also draws attention to the differences in inclination to participate in group discussion, and that it is an experience which is not comfortable for some children. This is important for those children who are less inclined to participate in group dialogue because it legitimises and challenges feelings of anxiety. Yet it is also key for those children who do tend to dominate discourse to realise that they may need to make space for other children. As has been mentioned, the components of the Playground of Ideas were not researched in isolation in this study, so it is not possible to make claims based on observed dialogue, but a theoretical and practical consideration of fostering dialogic relationships indicates that this could be a key component to an intervention to develop dialogic thinking. The Playground of Ideas emphasises bringing into dialogue not only those aspects of dialogue about which one is confiden, but also those about which one is not. The research question asks how children can begin to develop dialogic thinking skills; I suggest an answer is to make explicit conversations about participation in dialogue, which has been a successful approach in the Playground of Ideas intervention, particularly the Slide and Lookout Tower images.

To now return to the problem of identifying dialogic relationships in classroom contexts: although the studies referenced here have sought the existence of certain characteristics of classroom dialogue, such as justifying ideas, clarifying and building on ideas, when these characteristics are recorded outside of the context of the dialogue, it cannot indicate whether or not a dialogic relationship is taking place, only that certain features of dialogue are occurring. While Lefstein and Snell attempted to

bring in a social dimension, this was done in an intensive way by observing and transcribing in detail the ways in which children's standing in the classroom interplays with the dialogue. I now consider how to simplify that approach for classroom practitioners.

8.5.6. Producing a dialogic thinking map

This research approach was very time intensive, as it took considerable time to code each question by turn and assign a role. Producing a map of these moves allows for a means by which to identify the moves which are made in other closed-ended group work tasks, and so adds to more generalizable principles of dialogic interaction. The advantage of schemas is to be able to identify that something is an example of a theoretical model by mapping it to existing constructs. Schemas have long been used in argumentation, for example, to set out a construct of argumentation. For example, both Toulmin (1958) and Perelman (1980) are concerned with argumentation schemes which employ means by which to examine statements or claims which have been made, either by using rhetorical techniques to convince an audience (Perelman) or by showing how the structure of statements made construct an argument (Toulmin). As Bakker (2018) stated, such schemas can be used across contexts, as was employed previously in this study to produce an argumentative grammar of the change of high-level design principle. The initial map which was produced as a result of this study is below:

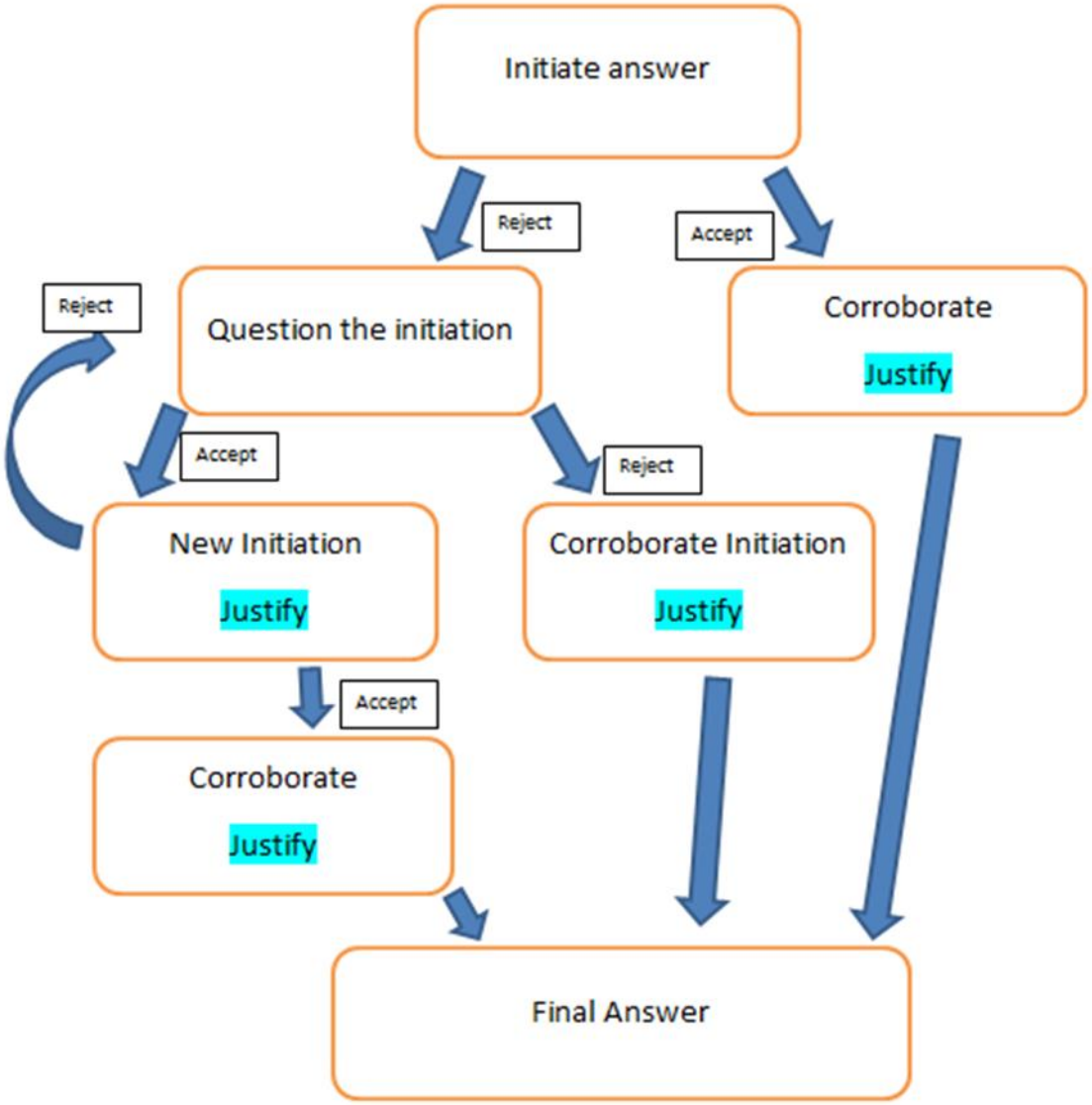


Figure 8.7. The dialogic thinking map

While this map charts the moves that were made, including the argumentation moves, it does not provide a full indication of what is dialogic about the successful group interactions. This success, it was indicated, was due to a variation in both the strategies and roles taken. Even successful groups used a simple Initiate – Corroborate – Final Answer strategy where that was all the question required. However, they also used a variety of other strategies where questions were more complex, and different children took the roles of initiator, collaborator and questioner. Groups which were less successful, which was most commonly seen in the pre-test, used a much reduced variety of roles, with the Initiate – Corroborate – Final Answer strategy being by far the most prevalent.

I therefore decided to incorporate a further layer to the dialogic thinking schema to indicate that it is dialogic only when considering the dialogic relationships which result in a variety of roles, and therefore strategies, being taken. This diagram indicates that there is a background of the dialogic relationship from which moves in dialogue (including dialectical moves) arise into the foreground (the event/eternity oscillation referred to by Wegerif and Buber).

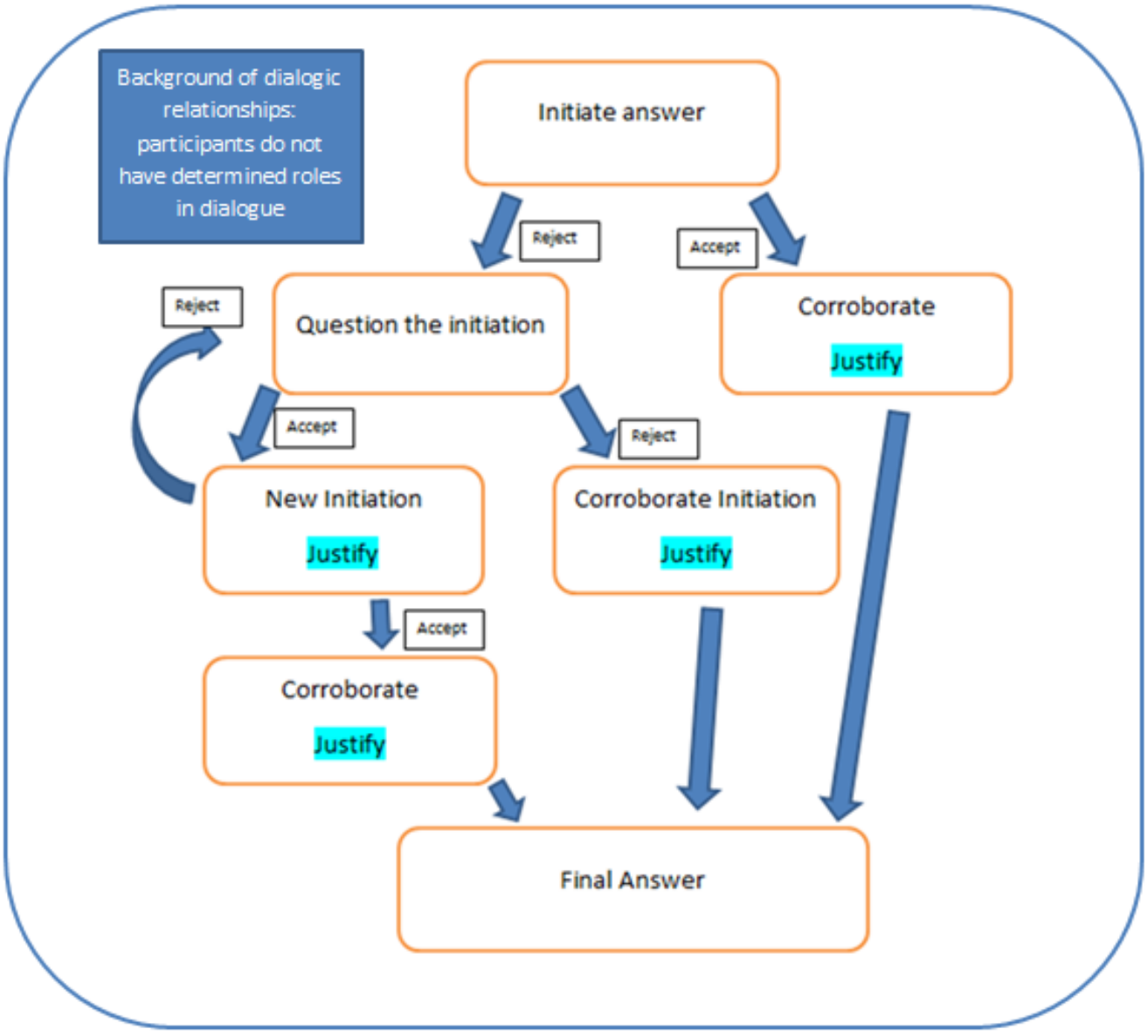


Figure 8.8. The revised dialogic thinking map

8.5.7. Quality measures

While there are not a large number of dialogic schemas compared to argumentation ones, Lefstein and Snell (2011, p. 178) have also produced a schematic of discourse patterns during dialogic open-ended whole class discussion:

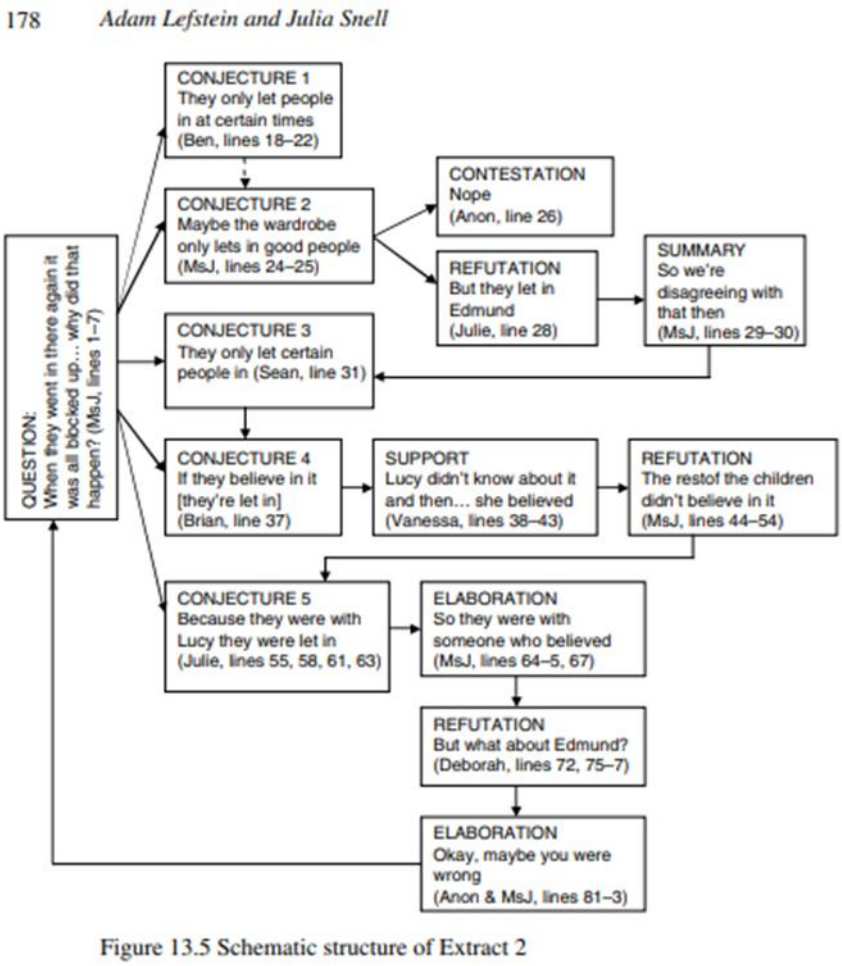


Figure 8.9. Dialogue moves in open-ended inquiry

I did not encounter this schematic until after I had designed mine, and an advantage of this is that a comparison of the two can indicate that the terms used in my schema are valid. Whereas my schema uses the terms: initiate, corroborate, question and justify, Lefstein and Snell's uses the corresponding terms: conjecture, contestation/refutation, support and elaborate. Although the terms used are different, they are synonymous with the ones generated from my findings, and so provide a validity check on my terms. Interestingly, although this schema is for open-ended discussion, the dialogue patterns are comparable.

As my schema was emerging from analysing the transcripts, I deliberately did not analyse two pairs of pre-post transcripts from the group test sessions, because I wanted to analyse them using the schema which was generated from the analysis of the other transcripts as a reliability check on the schema. The table below shows the dialogue moves from this analysis of one of the group tests (Ava, Frankie and Robert, table 8.4c) when coding using the dialogic thinking map. This activity indicated that the schema was an effective one for carrying out analysis of the analysis of the variation in roles and strategies used by the groups.

Table 8.19. Pre- and post-test coding using the dialogic thinking map

Pre-test	**Post-test**
Initiation	Initiation and justify – Question – Question and justify – Corroborate – Corroborate and justify
Initiation – Corroborate	Initiation – Corroborate and justify
Initiation – Question – New initiation	Initiation and justify – Question – Corroborate and justify
Initiation	Initiation and justify – Corroborate and justify
Initiation and justify - Corroborate	Initiation and justify – Question and justify – New initiation – Corroborate and justify
Initiation - Corroborate	Initiation – Question and justify – New initiation – Corroborate – Corroborate and justify
Initiate – Question – Corroborate and justify	Initiation and justify – Question and justify – New initiation – Question and justify – Corroborate and justify - Corroborate

8.6. Design review

8.6.1. Review of research methods

The research conducted shows, as a whole, that the skills and dispositions which the Playground of Ideas intervention aimed to foster are apparent in dialogue features in the testing phase. However, what it does not do is isolate specific elements of the Playground of Ideas. Due to the complex nature of designing a classroom intervention, the intervention incorporated several elements, such as warm up games, discussion questions, generation of talk rules, as well as the

Playground of Ideas images, it is difficult to know which of these had the impact which is claimed.

One of the design principles was that an intervention to foster dialogic teaching and learning should take the form of a coherent strategy. A coherent strategy necessarily incorporates a number of elements, and so to have simplified the design would not have resulted in a useable classroom intervention, which Brown (1992) has identified as a feature of DBR. A further iteration could now be developed in which tasks were given which specifically tested isolated aspects of the intervention, if this is possible, or alternatively specific language could be examined from individual Playground of Ideas sessions to examine how this features in extended curriculum or group work tasks.

Use of the Bond test

The use of the Bond non-verbal reasoning paper differed from the Raven's test by using pictures rather than abstract pattern images. The test claims to require no previous knowledge, however the images did require specific cultural knowledge. For example, one of the questions, here given in word form, asked 'Violin is to violin bow as drums are to…' and the correct answer was drum sticks. This obviously requires a knowledge of what these musical instruments are, and how they are played.

This was seen in the language used by some of the children when answering one question which asked, which comes next? The children were asked to choose the next picture in the pattern, which was of vegetables such as cabbages and leeks. A number of children did not know what the leek was, one child describing it as 'that stick thing'. This did not prevent the child from identifying the correct picture in the pattern, but one of the other children told the one who did not know, "that's a leek". Of course, the Raven's test is also culturally dependant, which is why normative standards are researched in individual countries.

8.6.2. Refining the design principles

The design principles to date, including the ones which were added as part of this iteration are that an intervention should:

- **Develop relational dispositions for critical thinking as a collaborative activity**
- **Promote argumentation language in order to discern the quality of arguments through dialogue**
- **Develop a Community of Inquiry amongst learners engaged in meaningful and purposeful discussion**

1) be easily accessible to teachers in terms of the content and the format in which it is presented. If this can be done with no need for additional training then this would be of benefit to individual teachers.

2a) encourage teachers to also consider themselves as learners

2b) provides explicit dialogue-based teaching-and-learning activities and also

2a) provide opportunities to link to other curriculum content

1) take the form of a coherent strategy

2a) incorporate argumentation techniques

2a) provide strategies for language modelling

2b) be embedded in the wider school contexts where possible

1) consider ways in which all students could engage in dialogue

2a) provide an explicit strategy by which children are encouraged to share their ideas

2a) provide opportunities for non-verbal dialogue

1) incorporate open-ended inquiry discussion

2a) involve physical movement as a discussion technique

2a) provide inquiries which children experience as challenging

2b) provide opportunities for meta-level reflection on dialogue

3) give children the opportunity to take different roles within dialogic thinking activities

Throughout the iterations, I chose to add to the design principles by presenting them in list form to indicate how each iteration had added to the design of the

intervention. However, as this was the final iteration reported on in this study, these principles now needed to be synthesised into a final design framework which incorporated the principles that had devised in each iteration into a coherent framework for developing interventions of this kind. This is presented as the final design framework in the following sub-section.

8.6.3. Design framework 5

A teaching and learning intervention to develop the dialogic thinking skills of six- and even-year-old children should:

1) Develop relational dispositions for critical thinking as a collaborative activity in which children take different roles at different times. Children should have the opportunity to reflect on the quality of their discussions.
2) Promote argumentation language as part of a coherent strategy in order to discern the quality of arguments in dialogue. In the initial stages language should be modelled and opportunities provided for non-verbal dialogue, which includes physical movement.
3) Develop a Community of Inquiry approach for teachers and learners to take part in challenging and purposeful open-ended discussion together. These inquiries should be undertaken as explicit sessions which are discrete from specific curriculum content, with dialogic thinking skills then employed as a strategy for learning activities in curriculum subjects.

8.6.4. Strategies for teaching and assessing classroom dialogue

While the previous section proposes a final design framework, this section builds on that by considering how this could be presented in a practical context, with translation into practical strategies and tools for the teaching and assessment of classroom dialogue. The final design framework has linked together the theoretical and practical elements of designing a dialogic thinking intervention, and these have been written above. However, although this study has been concerned with the

development of a specific intervention, a finding that emerged from all of the iterations was that dialogic pedagogy is not a piecemeal one but is linked to changes in classroom culture through teachers and learners. For this reason I considered how to connect the insights gained from this study back into a broader classroom consideration of dialogic pedagogies.

One challenge that has been seen with dialogic pedagogies is that for a dialogical pedagogy to really work, it "cannot be finally planned out ahead of time" (Kramer, 2013, p. 65). Although a willingness for dialogue is a vital prerequisite, once that is there, one must "navigate moment by moment" (Friedman, quoted in Kramer, 2013, introduction). However, just as the claim that dialogue is immeasurable is not a helpful one for research, proposing that dialogue 'just happens' is not a helpful one for pedagogy. Of course, this is in reference to dialogue in Wegerif's (2007) technical sense of the term dialogue which does not just mean 'having a talk' with someone. Teachers can prepare activities in which children will talk with each other; this does not mean that they are in dialogue. However, as this study has shown there are means by which to foster the vital willingness for dialogue alluded to, and inquiry dialogue into open-ended questions promotes a more dialogic nature of interaction which also positively impacts on close-ended tasks such as are found in the wider curriculum. This finding is a useful one because it answers the question of *why* teachers should take the time in a busy curriculum to conduct inquiry dialogues about open-ended or non-curriculum specific topics. It is also necessary to answer the question of *how* teachers can do this. The Playground of Ideas intervention was successful as one way of doing this, but the point of DBR in education research is to produce generalizable principles for teaching and learning. These principles should be useful to practitioners, and so the principles which are given here are presented as guidance for practitioners. They are given as 'fostering and identifying dialogic relationships' rather than skills because of the finding in this study that it was dialogic relationships that resulted in increased strategies for problem-solving: the relationship comes first.

8.6.5. How to foster dialogic relationships

- Give learners the opportunity to give their opinion and see that their opinion is different from others
- Provide these opportunities in low-stakes ways through games or in which do not include verbalising thinking
- Give learners model vocabulary to agree and disagree with each other
- Hold open-ended discussions that do not relate to curriculum content
- Provide opportunities for discussion rather than writing
- Encourage learners to give reasons for their answers (giving reasons to the group is a way of showing that others in the group matter)

8.6.6. How to identify dialogic relationships

- Learners spontaneously take different roles within a group
- Learners show responsibility for their own group organisation
- Learners use a range of strategies for problem-solving
- All learners within a group question each other, (although this will not be demonstrated all of the time by all participants)

The list which appears under the heading ‘How to foster dialogic relationships’ is not particularly novel. In some ways, the findings that dialogic thinking skills and dispositions are predicated on dialogue moves such as justification and questioning, in groups who get along with each other, are not new, although this study does corroborate previous ones. Wegerif’s *et al* (2017) paper indicates that ‘warm positive affect with shared smiles and laughter’ and ‘mutual respect in tone and responses (p. 25) could create a shared dialogic space. Correspondingly in this study it would almost be possible to predict a group’s success in this study by looking at the series of video stills. Similarly, Howe, Hennessy and Mercer (2020) report that student participation levels, where “multiple students engage with each other’s ideas” (p. 187) are a key factor, alongside the codes of Elaboration and Querying, in identifying dialogue-attainment relations, where attainment was on the standardised assessment tests taken in mathematics in Year 6 (age 10-11), which students sit as

individuals. The authors found that it was the presence of these three factors which together has an impact on attainment. Vrikki *et al* (2019) also found in a study of dialogue in 72 classrooms that elaboration, reasoning and querying were the codes which appeared with most frequency.

However, as was examined in the analysis section of this chapter, identifying true dialogic relationships is difficult, often resulting in the observation of instrumentalised dialogue which is used in the service of an educational end but does not really indicate that there is a dialogic relationship. While pre-identified coding is proposed, sensibly, as a means by which researchers and practitioners can quickly identify types of dialogue in a busy classroom context, Lefstein and Snell (2020) have highlighted that this is problematic for capturing all of the facets of dialogue. Yet their approach is not practicable in classrooms. What is needed is a way of quickly identifying that dialogue is taking place within dialogic relationships, and to identify that those items under the heading 'How to identify dialogic relationships' in the list above are occurring.

I therefore propose a means of assessment which is derived from Buber's conception of oscillating between I-It and I-Thou relationships together with the findings from this study. For example, Kramer (2013, p. 23) gives the example of 'controlling' as an I-It relationship and 'yielding' as an I-Thou relationship. But yielding cannot be the case all of the time (as Buber makes clear). When all parties yield, consensus might be achieved but, in an education context, not with a right answer or having fully explored the question. This is what Mercer, Wegerif and Dawes (1999) found to be the problem with cumulative talk: lots of agreeing and putting a community first but without critical engagement necessary to successfully complete the task. By contrast, disputational talk characterises an I-It relationship in which individuals argue for their own perspective without yielding to others. I think that was is described as successful 'exploratory' talk by Mercer, Wegerif and Dawes can be alternatively explained as an oscillation between disputational and cumulative talk, entering and re-entering the dialogic space of possibility as these I-It and I-Thou relationships are traversed.

My premise is that what is key to identifying dialogic relationships in an education context is that sometimes a child will demonstrate a more single-minded approach in

conveying their ideas to others and at other times demonstrate a yielding to the ideas of others. Relationships are therefore not equal, they are equitable, and although asymmetry in such relationships is necessary, it is an oscillating asymmetry which does not position or finalise any one participant as the 'lower' party for an extended period of time. This is what teachers should identify in classrooms.

While the dialogic thinking map which I produced encapsulates this to an extent, it is not rendered in a format which is easily useable by teachers, because using the schema as part of live coding to identify the moves which are being made, how frequently and by whom is too complicated a task for a classroom setting. Asking teachers to record and video analyse group work using the schema is unrealistic as part of everyday practice. Therefore the next step was to reconceptualise the schema into a format which would allow classroom teachers to be able to record dialogue in such a way that would allow dialogic relationships and not just instrumentalised dialogue to be captured.

To do this, I took the different dialogue moves from the schema and rendered them as pairs of statements which described all of the moves taken, arranged as reciprocal pairs. This is because a dialogic relationship would comprise children exhibiting several roles within the dialogue rather than being positioned or finalised 'as' a certain role. The table below indicates these argumentation moves of dialogue within dialogic relationship pairings:

Table 8.20. Argumentation in dialogue assessment framework

I	**You**
Tell you what I'm thinking	Listen to what I'm saying
Listen to what you're saying	Tell me what you're thinking
Make a point	Ask me for a reason
Ask you for a reason	Make a point
Make a point	Agree with me
Agree with you	Make a point
Make a point	Disagree with me
Disagree with you	Make a point
Make a point	Suggest something else
Suggest something else	Make a point
Give you a reason	Respond to my reason
Respond to your reason	Give me a reason

This table could then be rendered as a checklist for teachers, for example:

Table 8.21. Refinement to the argumentation in dialogue assessment framework

Child Name:	**Child Name:**
Tell you what I'm thinking	Listen to what you're saying
Listen to what you're saying	Tell you what I'm thinking
Make a point	Ask you for a reason
Ask you for a reason	Make a point

Plus the additional categories could be included. The example given above is one in which two children are in dialogue with each other but of course this could be expanded to include additional children.

The findings from the study and the concept of asymmetrical oscillation indicate that there is a temporal dimension to the analysis of dialogue. In order to ascertain whether dialogue is being used instrumentally or within a dialogic relationship, one has to look at variations in dialogue patterns and roles taken over time in more than one question or group interaction. Considering each question individually allowed this analysis to be a feature of this iteration, which has a benefit over discussing a single exchange. Wegerif and Major (2019) write that the oscillation is "between two identities over time" (p. 19). Over time, it is possible to observe how power relations are flexible, and authority is shared among group members. This also helps to dispel the problems of relativism which were alluded to in the literature review. It is a problem, when everyone's ideas are regarded as equal, to be able to make value judgements or claims to distinguish between arguments made. The process of the Community of Inquiry – holding knowledge tentatively to be questioned and reformulated – requires ideas to be justified and evaluated.

Given this, a tally chart for teachers to be able to chart the development of children dialogic thinking skills and dispositions could look like this (some of the categories are given here), with tallies in each category recorded over a number of instances of group work or questions answered:

Table 8.22. Argumentation in dialogue as an observation rubric

Child name:	**Observation**				**Child name:**	**Observation**			
	1	**2**	**3**	**4**		**1**	**2**	**3**	**4**
Tell you what I'm thinking					Listen to what you're saying				
Listen to what you're saying					Tell you what I'm thinking				
Make a point					Ask you for a reason				
Ask you for a reason					Make a point				
Make a point					Agree with you				
Agree with you					Make a point				

If, over the course of several observations, there are tallies in several of the category pairs, it could indicate that different roles taken within the group and the ways in which different problems are tackled are varied and that there is, therefore, a dialogic relationship between the children. However, if over time, for example, Child A's 'I tell you what I'm thinking' is never matched by Child B's 'I listen to what you're saying' then it could indicate that Child A's contributions do not matter to the group.

In terms of practical classroom management, there are several ways that this could be accomplished. Guided reading is one such comparable example of practice in which the teacher works with a small group. While others in the class read or carry out other tasks independently, the teacher works with a group of approximately five children to hear them read and carry out comprehension tasks based on a text. If this type of arrangement were carried out where small groups are given a task and the teacher observes and completes the observation checklist.

Chapter 9. Conclusion

The concluding chapter begins with a summary of the study in order to provide a pathway to how the overarching research question was answered, which is the subject of section 9.2. This section provides answers to the research questions within the framework of DBR. Following this, section 9.3 considers how this study has made an original contribution to knowledge and 9.4 proposes avenues for future research based on the outcomes of this work.

9.1. Summary of the study

The study began with the problematization of children's ability to reason successfully together in group work to solve problems in curriculum subjects, with mathematics learning activities given as an example. The issue seemed to be the gap between the provision of learning activities in which children talked together in small groups, and the differences between the expectations of this approach and the(sometimes unsuccessful) ways in which this manifested itself in practice. There were two broad dimensions of this problematization identified: ability to use reasoning to problem-solve, and ability to do this with peers in small group work.

The literature review therefore focussed on areas which pertained to these and the relationship between them. These comprised Philosophy with Children, the Community of Inquiry, theories of dialogue and empirical studies, critical thinking and argumentation. As a result of this, certain aspects of each of these areas were rejected from consideration in the study. Among these were individualistic conceptions of critical thinking and argumentation.

A great deal of classroom research into dialogue has been conducted through a social constructivist Vygotskian lens. While this thesis did not examine this perspective in sufficient detail to claim to reject it, concerns were identified in the literature about the theoretical coherence between Vygotskian and dialogic theories, and as a result a Buberian perspective was taken. There were also a number of positive reasons for this when compared with the more common Bakhtinian approach. I proposed that Buber's conception of dialogue as oscillation between I-

Thou and I-It relationships could be a useful one for considering dialogue in the context of educational institutions. Relationships are a continual swinging between I-Thou and I-It, for example between individual assertion and yielding to others. The literature review was summarised and these points synthesised to formulate initial high-level theoretical design principles which formed Design Framework 1.

DBR was identified as a suitable research methodology for this project because the initial problem was one which had arisen out of a real education context. The problem could be addressed by developing an artefact (i.e. educational intervention) which would fill the gap between the ideation and actuation of children's classroom dialogue. DBR then offered scope for this to be revised and refined in the context of authentic practice.

To anchor the research question in the literature and in the methodology, the research question was presented at the end of the methodology chapter, and is coherent with a DBR approach in that it asks *how* a particular design works, not just *whether* or not it works. The overarching research question for the study was:

How can a teaching-and-learning intervention support primary age children of six- and seven-years old in England to begin to demonstrate dialogic thinking in whole-class and small group contexts?

To test the principles of Design Framework 1 in the context of practice I then conducted an exploratory study (Iteration 1) to situate these principles in practice and to formulate further design principles. The sub-questions for this iteration were:

1. What elements of dialogic thinking are important for children in the target age group to develop?

2. What are the barriers to the development of these skills and dispositions in current teaching and learning practice?

The methods for the exploratory study were discussions with practitioners, classroom observations and a review of the Primary National Curriculum document and of Ofsted reports. The findings led to a revision of the Design Framework to begin to add principles of practice to the theoretical ones. At this stage, a trial intervention was produced: the Playground of Ideas. I took the concepts which had

been identified in the literature and exploratory study as key for dialogic thinking and embodied these in images of playground equipment to engage children in the target age group. I worked with a Year 2 teacher to develop lesson plans to accompany the images. The research sub-questions identified at this stage were:

1. Do Year 2 children understand the images that constitute the Playground of Idea as representative of the concepts they exemplify?

2. Are the sessions practically implementable in the classroom (e.g. timing of sessions, variation of activity, appropriateness of activity to age group, providing opportunity for discussion)?

3. Are there any indications that participants (teacher and learners) are developing the skills and/or dispositions for dialogic thinking?

4. How can these materials be taught independently by trained teachers without researcher input?

The intervention was trialled in a local context (Iteration 2a) in which I taught the sessions and was observed by the class teacher. The teacher and I discussed and made revisions to the intervention in an on-going process as the sessions took place. At the end of the sessions, the children were given a questionnaire to investigate their understanding of the concept of the intervention and their engagement with the sessions and selected children were interviewed as a group to deepen this investigation. I also held a semi-structured interview with the class teacher.

Further revisions were made to the intervention in line with these findings, and the design principles were also revised. The intervention was prepared as a stand-alone resource pack for teachers to trial in an extended context (Iteration 2b), and the following research sub-questions were asked:

1. Can the Playground of Ideas resource pack be used successfully by primary teachers outside of a local context?

a) Does the Playground of Ideas have an impact on teaching practice?

2. Do children have a comparable conceptual understanding of the Playground of Ideas when it was taught by a non-specialist teacher?

There was no researcher presence during this iteration, in order to gain a better understanding of teacher fidelity to the intervention. This was investigated by giving the children who participated in this iteration the same questionnaire as in the previous iteration, and coding it using the same framework to compare across sites. The teachers were also given a questionnaire which was developed using themes from previous coding of a teacher interview.

The findings from this iteration were that the Playground of Ideas was implementable in classrooms across these contexts, and that children had a comparable level of engagement with the images and session content. Teachers indicted that children's dialogue, including participation, was positively impacted, as was their own practice.

At this stage, an evaluation of the Playground of Ideas was conducted because the design had been successfully implemented in iterations 2a and 2b. The research sub-questions were:

1. How is children's dialogic thinking characterised in small group work before and after the intervention?

2. How can Buber's dialogic approach provide understanding of classroom dialogue?

The way in which children's dialogic thinking was characterised was measured by non-verbal reasoning tests before and after the intervention which were taken individually and in groups of three. The findings were that in the post-test children demonstrated more instances of justifying their ideas and questioning each other. Children's roles as initiator, corroborator or questioner were more varied in the post-test, as were the strategies used to answer questions.

This led to the production of the dialogic thinking map which provides a schema for dialogic thinking in closed-ended problem solving (although it would be interesting see it if it is suitable for open-ended inquiry too). Buber's concept of oscillation between I-Thou and I-It relationships was found to be a useful one when researching

classroom dialogue, and from this was developed an assessment rubric for dialogic thinking for practice and further research.

9.2. Answering the main research question

The aim of DBR is to create a "create a successful design product" (Edelson, 2002, p. 112) through the process of design decisions, procedures and analysis, as with any design work. However, and crucially, DBR is distinguished from other types of design work as there is an additional goal of developing "generalizable theories" (p. 112). This is why the design framework for this study (section 1.4.) begins with strands of practice, theory and methodology, and links these together throughout the study to create an intervention. At the end of the design framework, these strands are pulled apart again, in order to be able to ascertain what has been learned in each of these domains. This section reports on the outcomes of these domains in respect to the overarching research question by following Edelson's very clear structure for reporting on DBR. Each of the headings in the following subsections are taken from Edelson's (2002) paper to provide an answer to the question which encompasses all of the facets of a DBR study.

9.2.1. Domain theory

These theories encompass a generalisation of a part of problem analysis, for example how learners learn or teachers teach. Edelson writes that there are two types of domain theory: context and outcome (p. 113). The former details the challenges which are faced when designing in a particular context - in this case, when designing an intervention to support primary children in England to begin to demonstrate dialogic thinking. An intervention of this design type should consider what are the challenges faced during the design process for other interventions of this design type. This study identified that there are three main issues that developers of interventions in this design context need to address: in the teaching context, the issue of teacher's experience of dialogic pedagogy and their support from colleagues and school leadership; in the learning context, the issue of children's

ability and willingness to participate in verbal dialogue. There is also an issue of children needing to develop contrasting abilities: of attending to their own point of view and giving voice to that, while attending to the voices of their peers in the Community of Inquiry.

The second type of domain theory is an outcomes theory, which generalises the desired outcomes from implementing an intervention. Cobb (2001, p. 459) refers to this as the development from a *possible* learning route at the beginning of the design process to a *demonstrated* learning route at the end of it. The desired outcome of this study was to design an intervention which embodied dialogic thinking: enabling children to discern the quality of reasoning in inquiry by proposing, justifying questioning, evaluating and revising ideas, through dialogic relationships in which this process was carried out not by individual thinking but across a community of learners. The final version of the intervention broke down this by explicitly presenting images which linked to: giving opinions and changing one's mind; developing the confidence to share ideas; inviting agreement and disagreement to ideas, weighing up reasons and noticing other's contributions. This was intended to focus children on their own contribution and those of others.

The outcomes theory (or demonstrated route) in this case is that dialogic thinking can be fostered through an intervention which includes the components described in the previous paragraph. Children did improve the quality of their reasoning, particularly their justification and questioning of their ideas. Children also demonstrated dialogic relationships by allowing the voices of others to be heard in different roles within the reasoning dialogue. The nature of the dialogic relationship was that sometimes children were initiating ideas and defending these, and at other times being receptive to ideas of others.

9.2.2. Design framework

The final design framework for this study has already been detailed in Chapter 8, but is also replicated below. The design framework is a "collection of coherent design guidelines for a particular class of design challenge" (Edelson, p. 114). Producing a design framework which, Edelson writes, should be prescriptive, answers the

research question because it provides a means by which others could approach a design challenge in this area of educational research. This design framework meets these criteria by explaining *how* an intervention should be formulated.

A teaching and learning intervention to develop the dialogic thinking skills of six- and seven-year-old children in England should:

1) Develop relational dispositions for critical thinking as a collaborative activity in which children take different roles at different times. Children should have the opportunity to reflect on the quality of their discussions.

2) Promote argumentation language as part of a coherent strategy in order to discern the quality of arguments in dialogue. In the initial stages language should be modelled and opportunities provided for non-verbal dialogue, which includes physical movement.

3) Develop a Community of Inquiry approach for teachers and learners to take part in challenging and purposeful open-ended discussion together. These inquiries should be undertaken as explicit sessions which are discrete from specific curriculum content, with dialogic thinking skills then employed as a strategy for learning activities in curriculum subjects.

4) Consider how teachers will be able to facilitate the intervention within the scope of their current practice, including the institution they work in and the support from colleagues or school leadership.

In his own work, Edelson also describes how his work produced two frameworks, one of which details the specific ways in which the design framework should be implemented. The Playground of Ideas resources form that framework, because it provides information for teachers about the Community of Inquiry and how to facilitate it. The contents page for the final Playground of Ideas resources, in fact, gives a good indication of the specific framework for the intervention:

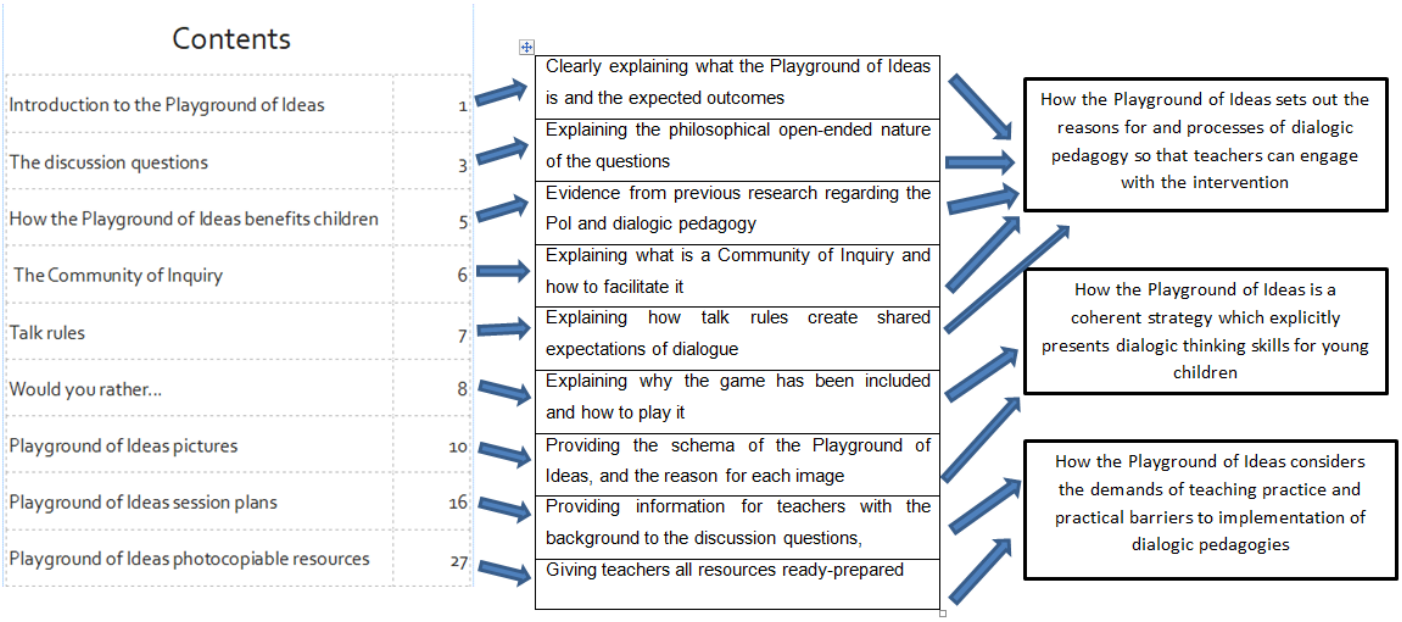


Figure 9.1. The Playground of Ideas as a design framework

As shown in figure 9.1, much of the intervention resources are focussed providing the teacher with information about the processes of dialogic pedagogy. This is because one identified aspect of the design framework is that the teacher is key in fostering dialogic thinking, and that it extends beyond this or any intervention but should be a part of classroom culture so that dialogue is not used instrumentally but is based on relationships. Clearly providing a framework for teachers which sets out the 'components' of dialogic thinking pedagogies is therefore an important part of a design framework in this educational context. In answering the question of how a teaching and learning intervention can be developed, a key answer is that it should also support teachers to develop their practice.

9.2.3. Design methodologies

A design methodology "provides guidelines for the process" (Edelson, p. 115) in implementing a design successfully. In particular, this considers the roles taken by and expertise of participants at each stage in the process. In the case of the Playground of Ideas, the expertise of the teacher was of particular importance at

particular stage in the process. Iteration 1 took design principles which had been derived from theory and from the researcher perspective and combined these with practitioner views to be able to design an initial intervention. In iteration 2a, I took the design decision to teach the intervention myself, but with the expertise of the class teacher as observer of the sessions. This expertise was a crucial factor in investigating how the intervention was working in a classroom context and in developing the intervention to be used more extensively. The figure below shows where the expertise of practitioners and researchers was of particular focus during iterations of the design. The division between the two is not so clearly delineated at times, because I was also a practitioner whose experiences (and expertise) helped to formulate aspects of the design.

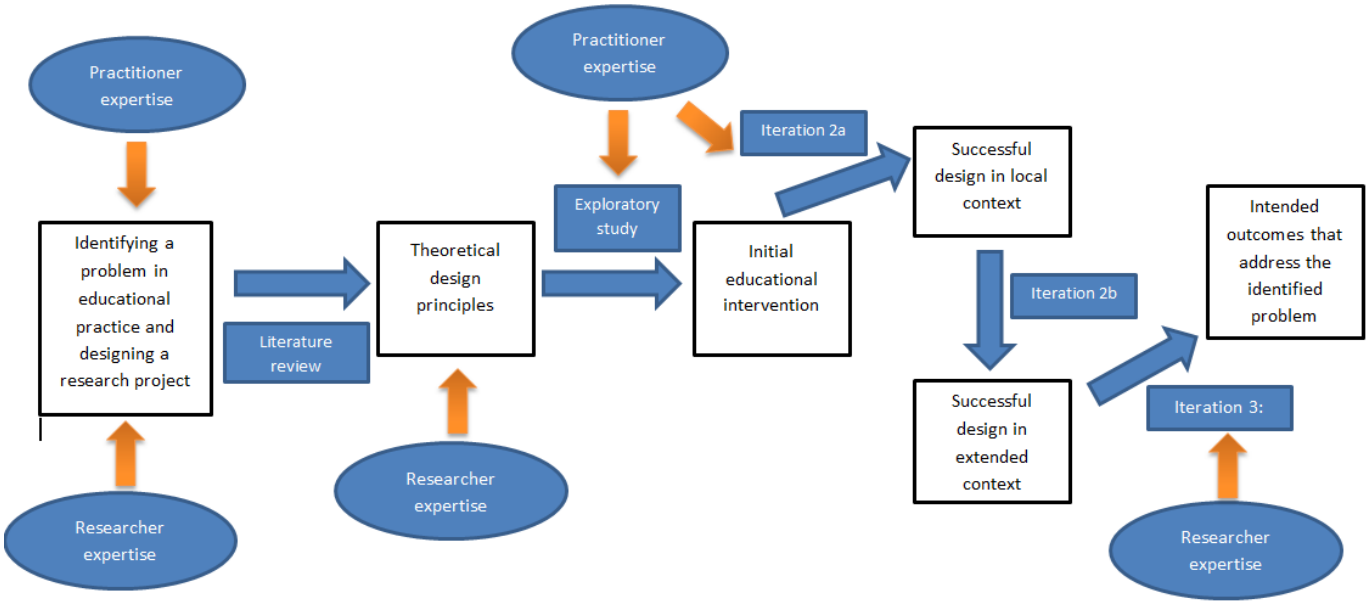


Figure 9.2. Expertise in developing a successful educational intervention

This diagram shows how practitioner expertise was particularly important at particular stages in the design. The exploratory study was a stage where the theoretical principles were investigated with teachers and in classrooms to develop the intervention. The practitioner's expertise in assessing how the intervention was working in the local context led to the development of the design for teachers in extended contexts where there is no researcher presence. In this way the teacher 'put' her expertise 'into' the design to provide a usable design to other teachers. Although it is common practice in DBR for design problems to be identified with practitioners in initial stages of a study, there are particular design methodology

conclusions to be drawn from the further stages. The design methodology for this study, then, is that if the researcher delivers an initial intervention with a practitioner observing, then the investigation by the two parties in collaboration provides a means by which the intervention can be extended to other teaching contexts because the expertise of researcher and practitioner combined in this way means that the intervention can be disseminated to other classroom contexts.

9.3. Contribution to knowledge

- Through the embodiment of a set of design principles for dialogic thinking interventions, this study has contributed the Playground of Ideas intervention, which has identified key aspects of dialogic thinking and presented them in an accessible form for children in Key Stage 1. The explicit aspects of dialogic thinking were selected from more detailed criteria in the fields of dialogue (including oracy) and argumentation to select particular criteria which are important for children to learn as they begin to develop their dialogic thinking; the Playground of Ideas functions as a schema for 'beginners' to think dialogically. The table below shows how the Playground of Ideas images correspond to aspects of other frameworks: while the images are embedded in the established literature, drawing together particular threads of these in this combination to provide a successfully-trialled new framework for this age group furthers understanding in this area.

Table 9.1. Comparison of Playground of Ideas terminology with other dialogic and argumentation schemas

	Playground of Ideas terminology	Dialogic teaching and learning terminology (Hennessey et al, 2016)	Oracy@Cambridge Skills Framework terminology (2016)	Argumentation schema terminology (Andrews, Costello and Clarke, 1993)
Swing	Giving opinions, changing your mind	Collective, allows transformation of underlying points of view	13 listening actively and responding appropriately	Take a point of view, express an opinion
Slide	Confidence to share ideas	Encourages equitable participation,	14 a) self-assurance	
Climbing Frame	Building on each other's ideas	Cumulative; critically constructive	7 b) building on the views of others 3 appropriate vocabulary choice	Give a reason Listen and respond to others' points of view
Seesaw	Evaluation: weighing reasons	Analysis of underlying points of view; critically constructive	10 a) giving reasons to support views;	Weigh up Make a comparison
Lookout Tower	Noticing what others are thinking; meta-level reflection	Social modes of thinking, collective	10 b) critically examining ideas and views expressed	Sum up the process of a discussion or argument

- The dialogic thinking map provides a means of understanding dialogue and argumentation together by showing that the variation in the roles taken by children in small group work leads to a variation in strategies to solve problems, and this is more a more effective approach to successful problem-solving.

- Considering classroom dialogue through Buberian philosophy is an under-represented approach in research into classroom dialogue. Proposing that classroom interactions incorporate both I-Thou and I-It relationships, and that these form an oscillating asymmetry of relationships over time provides an explanation of dialogue in the context of the classroom.

- The connection of effective small group reasoning to a greater distribution of roles taken in the group adds important information to coding approaches in classroom dialogue research and the perennial problem of whether dialogue

is being used instrumentally by students or if they are really engaged in dialogic relationships.

- The study has contributed a practical set of guidelines for teachers, as well as utilised the theory and findings to suggest a prototype assessment rubric for teachers and researchers to use in investigating classroom dialogue.

9.4. Future research

This section considers what research might be carried out further to the insights gained in this study. It is also a useful review of the limitations of the work carried out here, and how carrying out additional studies could begin to answer some of the gaps highlighted here.

Iteration 2b saw the intervention trialled in extended contexts across England. However, the sample was a self-selecting one, and the fact that they answered an advertisement to participate in this study indicates that they were predisposed toward the pedagogy. Therefore a research question which could arise for a further iteration of the study is: how much does this change teachers' practice and wider classroom culture when teachers are not disposed to dialogic pedagogy already? This could be investigated by recruiting teachers through head teachers, and focussing more on teachers' perceptions of dialogic pedagogies before and after teaching the intervention.

A further important consideration for future research is that the Playground of Ideas is very much a 'beginner's approach' to philosophical questions and to argumentation language. The intervention is structured around the images of play equipment, which act as the main stimulus for the sessions. Although I considered providing other stimuli, such as stories or film clips, to introduce the topic for discussion, it would have been too much material to fit into the session time. The Playground of Ideas has been successful at introducing argumentation language into open-ended inquiry, but it would also be of interest to analyse the longer-term effects of this in open-ended discussions which were not explicitly supported by the Playground of Ideas images. Recording dialogue in these sessions could give an

indication of the ways in which children continue to demonstrate the dialogic thinking skills which they expressed during the sessions and group tests. This research direction arose after consideration of the teacher's view in iteration 2b that they "wished there were a sequel". A way of doing this would be to provide a set of stimulus materials for further philosophical open-ended discussions. If there had been time during this project, it would also have provided another way of investigating the effectiveness of the Playground of Ideas for fostering the dialogic thinking skills and relational dispositions of Key Stage 1 children.

The dialogic thinking map could be used to carry out analysis on further samples of dialogue, including open-ended inquiry, which would provide more information about its scope and usefulness in analysing dialogue.

Another angle of research could focus on the dialogic oscillation assessment tool which was proposed as an outcome of iteration 3, but which currently exists only in conceptual form. It would be interesting to trial this with practicing teachers to gain their perspective on its use. Once further developed, it could also be trialled as an assessment tool for the Playground of Ideas or by analysing existing samples of dialogue collected from other research projects.

References

Alexander, R. (2004). *Towards dialogic teaching: Rethinking classroom talk (4th edition*). Cambridge: Dialogos

Alexander, R. (2008). Speaking but not listening? Accountable talk in an unaccountable context. *Literacy, 44*(3), 103-111.

Anderson, T. and Shattuck, J. (2012). Design-based research: A decade of progress in education research? *Educational Researcher*, *41*(1), 16-25 DOI: 10.3102/0013189X11428813

Anderson, R., Nguyen-Jahiel, K., McNurlen, B., Archodidou, A., Kim, S., Reznitskaya, A., Tillmann, M. and Gilbert, L. (2001). The Snowball Phenomenon: Spread of Ways of Talking and Ways of Thinking across Groups of Children. *Cognition and Instruction, 19*(1), 1-46. Retrieved from www.jstor.org/stable/3233905

Andrews, R. (1995). The importance of argument in education. London: Institute of Education, University of London

Andrews, R. (1997). Reconceiving argument. *Educational Review, 49*(3), 259-269. DOI: 10.1080/0013191970490305

Andrews, R. (2007). Argumentation, critical thinking and the postgraduate dissertation, *Educational Review, 59*(1), 1-18. DOI: 10.1080/00131910600796777

Andrews, R. (2009). *Argumentation in Higher Education : Improving Practice Through Theory and Research*. Taylor & Francis Group. Retrieved from: ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/CAM/detail.action?docID=449455

Andrews, R., PJ.M. Costello and S. Clarke. (1993). *Improving the Quality of Argument 5-16*: Final Report. Esmee Fairbairn Charitable Trust/University of Hull

Artino, A.R., Rochelle, JS., Dezee, K.J. and Galhbach, H. (2014). Developing questionnaires for educational research: AMEE Guide No. 87. *Med Teach, 36*(6), 463-74. DOI: 10.3109/0142159X.2014.889814

Askew, M. (2012). *Transforming primary mathematics*. London: Routledge.

Askey, H. and Knight, P. (1999). *Interviewing for social scientists*. London, Thousand Oaks, New Delhi: SAGE

Atkinson, D. (1998). Comments on Dwight Atkinson's "A critical approach to critical thinking in TESOL": The author responds . . . . *TESOL Quarterly*, *32*, 133–137.

Atkinson, P., Coffey, A. and Delamont, S. (2003). *Key themes in qualitative research. Continuities and changes*. Lanham: AltaMira Press

Avnon, D. (1998). *Martin Buber: The hidden dialogue*. Lantham and Oxford: Rowman & Littlefield Publishers, Inc

Bacon, M. (2012). *Pragmatism.* Cambridge: Polity Press

Baker, M., Andriessen, J. and Schwarz, B. (2020) Collaborative argumentation-based learning. In N. Mercer, R. Wegerif and L. Major (Eds.). *The Routledge International Handbook of Research on Dialogic Education.* London: Routledge (pp. 76-88). DOI: 10.4324/9780429441677

Bakhtin, M.M. (1981). *The dialogic imagination: Four essays*. Ed. M. Holquist. Translated by C. Emerson and M. Holquist. Austin and London: University of Texas Press

Bakhtin, M.M. (1984). *Problems of Dostoevsky's poetics*. (Trans. C. Emerson). Minneapolis: University of Minnesota Press

Bakker, A. (2014, August 25th). *Research questions in design-based research.* Retrieved from: http://www.fi.uu.nl/en/summerschool/docs2014/design_research_michiel/Research

Bakker, A. (2018). *Design research in education: A practical guide for early career researchers.* London: Routledge

Ball, S. (2003). The teacher's soul and the terrors of performativity, *Journal of Education Policy*, *18(*2), 215-228, DOI: 10.1080/0268093022000043065

Barab, S. and Squire, K (2004). Design-based research: Putting a stake in the ground. *The Journal of the Learning Sciences, 13*(1), 1–14. Retrieved from http://www.jstor.org.ezp.lib.cam.ac.uk/stable/1466930

Barrow, W. (2010). Dialogic participation and the potential for philosophy for children. *Thinking Skills and Creativity 5*, 61-69

Bell, V. (Ed.). (1999). *Performativity and Belonging*. London, Thousand Oaks CA and New Delhi: SAGE

Benitez, J. (2009). Visual Language and Communication in an Emerging Global Civilization: The Ascendance of the Image*. International Journal Of The Humanities*, 6(12), 111-116.

Berg, T., & Pooley, R. (2013). Rich Pictures: Collaborative Communication Through Icons. *Systemic Practice & Action Research, 26*(4), 361-376. DOI:10.1007/s11213-012-9238-8

Biesta, G. (2011). Philosophy, exposure, and children: How to resist the instrumentalisation of philosophy in education. *Journal Of Philosophy Of Education, 45*(2), 305-319. DOI: 10.1111/j.1467-9752.2011.00792.x

Biesta, G. and Burbules, N. (2003). *Pragmatism and Educational Research*. Lanham: Rowman and Littlechild

Bleazby, J. (2011). Overcoming relativism and absolutism: Dewey's ideals of truth and meaning in philosophy for children. *Educational Philosophy & Theory*, *43*(5), 453-466. DOI: 10.1111/j.1469-5812.2009.00567.x

Boaler, J. (1999). Participation, Knowledge and Beliefs: A Community perspective on Mathematics Learning. *Educational Studies in Mathematics, 40*(3), 259-281.

Bohm, D. (2004). *On Dialogue*. London: Routledge

Boyatzis, R. E. (1998). *Transforming qualitative information: thematic analysis and code development*. Sage.

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77-101.

Briggs, C. (2003) Interviewing, power/knowledge and social inequality. In J. Holstein an J. Gubrium (Eds.) *Inside Interviewing New Lenses, New Concerns.* (pp 495-506) London: SAGE.

Bronkhorst, L. and de Kleijn, R. (2016). Challenges and learning outcomes of educational design research for PhD students *Frontline Learning Research* 4(3), 75-91. DOI: 10.14786/flr.v4il.198

Brown, A. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *The Journal of the Learning Sciences, 2*(2), 141-178. Retrieved from http://www.jstor.org.ezp.lib.cam.ac.uk/stable/1466837

Brown, J. (2017). A dialogical research methodology based on Buber: Intersubjectivity in the research interview. *Journal of Family Therapy, 39*, 415-436. DOI: 10.1111/1467-6427.12174

Bryman, A. (2008). *Social Research Methods (3rd Edition*). Oxford: Oxford University Press

Buber, M. (1923/2013). *I and thou*. London: Bloomsbury

Buber, M. (1947/2002) *Between man and man* (trans. R. G. Smith). London: Kegan Paul,Trench, Trubner & Co Ltd

Buber, M. (1965) *The knowledge of man*. M. Friedman (ed.) (trans. M. Friedman and R. G. Smith). New York: Harper and Row.

Buber, M. (2004). *I and thou.* London: Routledge.

Buckley, J. (2012). *Thinkers' games.* Writtle: One Slice Books

Buckley, J. and Bigglestone, T. (2016). *Philosophy circles: How to embed P4C in your curriculum*. Writtle: One Slice Books

Burbules, N. (1993). *Dialogue in teaching: Theory and practice*. New York: Teachers College Press

Burgh, G., Field, T. and Freakley, M. (2006). *Ethics and the community of inquiry: Education for deliberative democracy*. South Melbourne: Cengage/Thomson

Butler, J. (2005). *Giving An Account of Oneself*. New York: Fordham University Press

Cain, T. and Harris, R. (2013). Teachers' action research in a culture of performativity. *Educational Action Research, 21*(3), 343–358. DOI: 10.1080/09650792.2013.815039

Callanan, M., Siegel, D., Luce, M (2007). Conventionality in family conversations about everyday objects. In C. Kalish and M. Sabbagh (Eds.). *Conventionlity in Cognitive Development: How Children Aquire Shared Representations in Language, Thought and Action* (pp. 83-97). San Fransisco: Jossey Bass.

Cam, P. (2014). Philosophy for Children, Values Education and the Inquiring Society. *Educational Philosophy and Theory 46*(11), 1-9. DOI:10.1080/00131857.2013.771443

Caruth, G. (2013). Demystifying mixed methods research design: A review of the literature *Mevlana International Journal Of Education, 3*(2), 112-122. DOI: 10.13054mije.13.35.3.2

Cassidy, C. and Christie, D. (2013). Philosophy with children: talking, thinking and learning together. *Early Child Development and Care*, *183*(8), 1072-1083. DOI: 10.1080/03004430.2013.773509

Cazden, C. (2001). *Classroom Discourse The Language of Teaching and Learning* (*2nd edition)*. Portsmouth, NH: Heinemann

Chew-Graham, C, May, C and Perry, M. (2002). Qualitative research and the problem of judgement: Lessons from interviewing fellow professionals. *Family Practice*, *19*(3), 285-289

Clarke, S. (1995). Extending children's voices: argument and the teaching of philosophy. In: P.J.M. Costello and S. Mitchell (Eds) Competing and Consensual Voices: The Theory and Practice of Argument (pp. 23-34). Clevedon: Multilingual Matters.

Cobb, P., Confrey, J., diSessa, A., Lehrer, R. and Schauble, L. (2003). Design experiments in education research *Educational Researcher*, *32*(1), 9-13

Cobb, P. (2001). Supporting the improvement of learning and teaching in social and institutional context. In S. Carver & D. Klahr (Eds.), *Cognition and instruction: 25 years of progress* (pp. 455–478). Mahwah, NJ: Lawrence Erlbaum Associates, Inc

Coffin, C. and O'Halloran, K. (2008). Researching argumentation in educational contexts: New methods, new directions. *International Journal of Research and Method in Education, 31*(3) pp. 219–227

Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education* (*6th edition).* London and New York, NY: Routledge Falmer.

Collins, A., Joseph, D. and Bielaczyc, K. (2009). Design research: Theoretical and methodological Issues. *Journal of the Learning Sciences, 13*(1), 15-42 DOI: 10.1207/s15327809jls1301.2

Costello, P.J.M. (1990). *Against Unjustifiable Indoctrination: Philosophy in the Primary School*. Ph.D. thesis, University of Hull, UK.

Costello, P J.M. (1995). Extending children's voices: argument and the teaching of philosophy. In: P.J.M. Costello and S. Mitchell (Eds) *Competing and Consensual Voices: The Theory and Practice of Argument* (pp. 112-130). Clevedon: Multilingual Matters.

Costello, P. (1996). Learning to philosophise and to argue. A thinking skills programme for children. *Analytic Teaching, 17*(1), 48-53. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.482.9756&rep=rep1&type=pdf

Costello, P.J.M. (2000). *Thinking Skills and Early Childhood Education*. London: David Fulton Publishers

Costello, P.J.M. (2010). Developing communities of inquiry in the UK: Retrospect and prospect. *Glyndwr University Research Online.* Retrieved from: https://glyndwr.repository.guildhe.ac.uk/249/1/fulltext.pdf

Creswell, J. (2003) *Research Design. Quantitative, Qualitative and Mixed Methods Approaches (2nd edition)* Thousand Oaks, London and New Delhi: SAGE

Creswell, J. W. (2011). *What has given rise to the interest in mixed methods research today?* [Streaming video]. Retrieved from SAGE Research Methods

Czubaroff, J. (2000). Dialogical rhetoric: An application of Martin Buber's philosophy of dialogue. *Quarterly Journal of Speech, 86*(2), 168-189. DOI: 10.1080/00335630009384288

Danesi, M. (2017). *The semiotics of emoji: The rise of visual language in the age of the internet.* London: Bloomsbury

Daniel, M-F. and Auriac, E. (2011) Philosophy, Critical Thinking and Philosophy for Children, *Educational Philosophy and Theory*, *43*(5)

Daniel, M. and Fiema, G. (2017). Dialogical critical thinking in children. *Knowledge Cultures, 5*(4), 42-65. DOI: 10.22381/KC5420174

Dawes, L., Mercer, N. and Wegerif, R. (2003). *Thinking together: A programme of activities for developing speaking, listening and thinking skills for children aged, 8–11*. Birmingham: Imaginative Minds Ltd.

Denscombe, M. (2010). *The good research guide for small-scale social research projects* (4th edition). Maidenhead, England: Open University Press.

Denzin, N. (2001). *The Reflexive Interview and a Performative Social Science. Qualitative Research, 1*(1), 23-46. Thousand Oaks: SAGE. DOI: 1468-7941(200104)1:1;23-46;016167

Department for Education. (2013). *English programmes of study: Key Stages 1 and 2 national curriculum in England.* Retrieved from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335186/PRIMARY_national_curriculum_-_English_220714.pdf

Department for Education. (2017). *Statutory framework for the early years foundation stage.* Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/596629/EYFS_STATUTORY_FRAMEWORK_2017.pdf

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, MA: Heath.

Dombey, H. (2003). Interactions between teachers, children and texts in three primary classrooms in England. *Journal of Early Childhood Literacy, 3*(1), 37–58. DOI: /10.1177/14687984030031002

Dresner, E., & Siebers, J. (2019). I interpret you: Davidson and Buber. *Review of Metaphysics, 73*(1), 109-126. Retrieved from: https://ezp.lib.cam.ac.uk/login?url=https://www-proquest-com.ezp.lib.cam.ac.uk/docview/2291521444?accountid=9851

Dummett, M. (1981). *Frege: Philosophy of Language. (2nd edition)*. Cambridge, Mass.: Harvard University Press

Echeverria, E. and Hannam, P. (2016). A pedagogical proposal for advancing democracy. In M. Gregory, J. Haynes and K. Murris (Eds). *The Routledge International Handbook of Philosophy for Children* (pp. 3-10) London: Routledge

Edelson, D.C. (2002). Design Research: What We Learn When We Engage in Design. *The Journal of the Learning Sciences, 11*(1), 105–121.

Education Endowment Foundation. (2015*). Philosophy for children: Evaluation report and executive summary*. Retrieved from: https://educationendowmentfoundation.org.uk/uploads/pdf/Philosophy_for_Children.pdf

Edward-Groves, C. and Davidson, C. (2020). Metatalk for a dialogic turn in the first years of schooling. In N. Mercer, R. Wegerif and L. Major (Eds.). *The Routledge International Handbook of Research on Dialogic Education*. London: Routledge (pp.125 -137). DOI: 10.4324/9780429441677

Edwards, D., & Westgate, D. (1994). *Investigating Classroom Talk*. London: The Falmer Press.

Ellerton, P. (2016). Pragmatist epistemology, inquiry values and education for thinking. In M. Gregory, J. Haynes and K. Murris (Eds). *The Routledge International Handbook of Philosophy for Children* (pp. 111-118). London: Routledge

Englhart, S. (1997). *Modelle und perspektiven der kinderphilosophie*. Heinsburg: Agentur Dieck

Ennis, R. H. (1963). Needed: Research in critical thinking. *Educational Leadership, 21*(1), 17-39.

Facione, P. (1990). *The Delphi report*. Millbrae, CA: California Academic Press

Fernald, A. and Weisleder, A. (2015). Twenty years after “meaningful differences,” It's time to reframe the “deficit” debate about the importance of children's early language experience. *Human Development, 58*, 1-4

Fisher, R. (2008). *Teaching thinking. Philosophical enquiry in the classroom* (3rd edition). London: Continuum

Foot, P. (1967). The Problem of Abortion and the Doctrine of the Double Effect. *Oxford Review*, *5*, 1-7. Retrieved from: http://www2.pitt.edu/~mthompso/readings/foot.pdf

Frank, A.W. (2005). What is dialogic research and why should we do it? *Qualitative Health Research, 15*, 964-974. DOI: 10.1177/1049732305279078

Freire, P. (1972). *Pedagogy of the Oppressed*. New York: Seabury

Friedman, M. (1976). *Martin Buber: The life of dialogue* (3rd edition). London: The University of Chicago Press.

Friedman, M. (1992). *Religion and psychology: A dialogical approach*. New York: Paragon House

Gehlbach, H. (2015). Seven Survey Sins. *The Journal of Early Adolescence, 35*(5–6), 883–897. DOI: 10.1177/0272431615578276

Gergen, M., & Gergen, K. (2000). Qualitative enquiry tensions and transformations. In Y. Lincoln and N. Denzin (Eds.). *Handbook of Qualitative Research* (2nd edition) (pp.1025-1046). London: SAGE

Gieve, S. (1998). Comments on Dwight Atkinson's "A Critical Approach to Critical Thinking in TESOL": Another reader reacts . . . . *TESOL Quarterly*, *32*, 123–129.

Gómez Salazar, M. (2016). Normative Pluralism. *Contemporary Pragmatism, 13*(4), 382-399. DOI:10.1163/18758185-01304003

Gorard, S., Siddiqui, N. and See, B. H. (2017). Can "philosophy for children" improve primary school attainment?. *Journal Of Philosophy Of Education*, *51*(1), 5-22.

Gravemeijer, K. and Cobb, P. (2006). Design research from a learning design perspective. In J. Van den Akker, K. Gravemeijer, S. McKenney and N. Nieveen (Eds.). *Educational Design Research* (pp.17-51). London: Routledge

Gregory, M, Haynes, J and Murris, K. (2016). (Eds.) Introduction. *The Routledge International Handbook of Philosophy for Children.* London: Routledge

Guilherme, A. (2015). Reflexions on Mendes-Flohr's and Avnon's Interpretations of Buber's 'Living-Centre': Implications for the Gemeinde. *Philosophia 43*, 821–841. https://doi.org/10.1007/s11406-015-9605-7

Guilherme, A. and Morgan, W. J. (2018). *Philosophy, dialogue and education. Nine modern European philosophers.* London: Routledge

Hammersley, M. (2008). *Questioning qualitative inquiry*. Thousand Oaks: SAGE. DOI: 10.4135/9780857024565

Hand, M. (2015). What do kids know? A response to Karin Murris*. Studies In Philosophy & Education*, *34*(3), 327-330. DOI:10.1007/s11217-015-9464-5

Hardman, F. (2020). Embedding a dialogic pedagogy in the classroom: What is research telling us? In N. Mercer, R. Wegerif and L. Major (Eds.). *The Routledge International Handbook of Research on Dialogic Education.* London: Routledge (pp. 139-151). DOI: 10.4324/9780429441677

Hardman, J. (2020). Analysing student talk moves in whole-class teaching. In N. Mercer, R. Wegerif and L. Major (Eds.). *The Routledge International Handbook of Research on Dialogic Education.* London: Routledge (pp. 152-165). DOI: 10.4324/9780429441677

Harré, R. and Van Langenhove, L. (1999). *Positioning Theory: Moral contexts of intentional action.* Oxford: Blackwell.

Harré, R. and Gillet, G. (1994). *The discursive mind.* Thousand Oaks: Sage Publications

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore: P.H. Brookes.

Hayes, D. (2015). Against critical thinking pedagogy. *Arts and Humanities in Higher Education, 14*(4), 318 – 328. DOI: 10.1177/1474022215592248

Hennessy, S., Mercer, N. and Warwick, P. (2011). A dialogic inquiry approach to working with teachers in developing classroom dialogue. *Teachers College Record*, *113*(9), 1906-1959.

Hennessy, S., Rojas-Drummond, S., Higham, R., Marquez, A-M., Maine, F., Rios, R-M., Garcia-Carrion, R., Torreblanca, O. and Barrera, M-J. (2016). Developing a coding scheme for analysing classroom dialogue across educational contexts. *Learning, Culture and Social Interaction, 9*, 16-44

Herrington, J., McKenney, S., Reeves, T. and Oliver, R. (2007). Design-based research and doctoral students: Guidelines for preparing a dissertation proposal. In C. Montgomerie & J. Seale (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications,* 4089-4097. Chesapeake, VA: AACE. Retrieved from: https://ro.ecu.edu.au/ecuworks/1612

Hildebrand, D. (2013). Dewey's pragmatism: instrumentalism and meliorism. In A. Malachowski (Ed.). *The Cambridge Companion to Pragmatism* (pp. 55-80). Cambridge: Cambridge University Press

Hilliard, D (2013). *Investigating the relationship between dialogic interaction and written argumentation in A level history* (PhD thesis). Retrieved from: https://ore.exeter.ac.uk/repository/handle/10871/10702

Hofmann, R., & Ruthven, K. (2018). Operational, interpersonal, discussional and ideational dimensions of classroom norms for dialogic practice in school mathematics. *British Educational Research Journal, 44*(3), 496-514. DOI: 10.1002/berj.3444

Holquist, M (1990). *Dialogism: Bakhtin and his world.* London: Routledge

Holstein, J. and Gubrium, J. (1998) Phenomenology, Ethnomethodology and Interpretive Practice in N. Denzin and Y. Lincoln. (Eds.). *Strategies of Qualitative Enquiry* (pp. 137-157). Thousand Oaks: SAGE

Howe, C. and M. Abedin. (2013). Classroom dialogue: A systematic review across four decades of research. *Cambridge Journal of Education, 43*(3), 325–356.

Howe, C., Hennessy, S. and Mercer, N. (2020). Classroom dialogue and student attainment. In N. Mercer, R. Wegerif and L. Major (Eds.). *The Routledge*

International Handbook of Research on Dialogic Education. (pp. 182-195) London: Routledge. DOI: 10.4324/9780429441677

Howitt, D. and Cramer, D. (2011). *Introduction to research method in psychology (3rd edition)*. Harlow: Pearson Education Limited

Jackson, A. and Mazzei, L. (2012). *Thinking with theory in qualitative research. Viewing data across multiple perspectives.* London and New York: Routledge

Johns, C. (2013). *Becoming a reflective practitioner*. Oxford: Blackwell

Kazak, S., Wegerif, R. and Fujita, T. (2015). The importance of dialogic processes to conceptual development in mathematics. *Educational Studies in Mathematics, 90*, 105-120. DOI: 10.1007/s10649-015-9618-y.

Kelly, A., Lesh, R. and Baek, J. (2008). Handbook of Design Research Methods in Education. New York: Routledge, https://doi.org/10.4324/9781315759593

Kelly, A. (2004). Design research in education: Yes, but is it methodological? *The Journal of the Learning Sciences*, *13*(1), 115-128

Kelly, A. (2006). Quality criteria for design research. In J. Van den Akker, K. Gravemeijer, S. McKenney and N. Nieveen (Eds). *Educational Design Research* (pp. 107-118). London: Routledge

Kennedy, D. (2006). *Changing conceptions of the child from the renaissance to post-modernity. A philosophy of childhood*. Lewiston: The Edwin Mellen Press

Kenny, L., Hill, E. & Hamilton, A.F.deC. (2016). The Relationship between Social and Motor Cognition in Primary School Age-Children. *Frontiers in Psychology, 7*, 228. DOI: 10.3389/fpsyg.2016.00228

Kerslake, L. and Rimmington, S. (2017) Sharing talk, sharing cognition: philosophy with children as the basis for productive classroom interaction. *Issues in Early Education*, *1*(36), 21-32. Retrieved from: http://www.pwe.ug.edu.pl/wp-content/uploads/2017/06/pwe-36.pdf

Kerslake, L. (2018). End-in-itself or means to an end? Solutions to the tensions between philosophising and schooling. In F. García, E. Duthie and R. Robles. (Eds.). *Parecidos de familia. Propuestas actuales en Filosofía para Niños / Family resemblances. Current proposals in Philosophy for Children*. Madrid: Anaya.

Kerslake, L. (2018). From pragmatism to posthumanism: thinking through the community of philosophical inquiry. In L. Kerslake and R. Wegerif (Eds.) *The Theory of Teaching Thinking. International Perspectives.* (pp.). London: Routledge

Keys Adair, J. and Pastori, G. (2011). Developing qualitative coding frameworks for educational research: immigration, education and the Children Crossing Borders

project. *International Journal of Research & Method in Education, 34*(1), 31-47. DOI:10.1080/1743727X.2011.552310

Kohan, W. (2012). Childhood, education and philosophy: Notes on deterritorialisation. In N. Vansieleghem and D. Kennedy (Eds.) *Philosophy for Children in Transition: Problems and Prospects* (pp. 170-198). Chichester, UK: Wiley-Blackwell

Kohan, W. (2014). *Philosophy and childhood: Critical perspectives and affirmative practices*. New York: Palgrave Macmillan.

Kramer, K. (2013). *Learning through dialogue: The relevance of Martin Buber's classroom.* Lanham: Rowman &Littlefield Education

Krosnick, J. A. (1999). Survey research. *Annual Review of Psychology, 50*, 537-567. DOI: 10.1146/annurev.psych.50.1.537

Kvale, S. (1996). *Interviews: An Introduction to Qualitative Research Interviewing.* Thousand Oaks: SAGE

Kvale, S. (2007). *Doing Interviews*. Thousand Oaks: SAGE. DOI: 10.4135/9781849208963

Kuhn, D. (2001). How do people know? *Psychological Science*, *12*, 1-8.

Kuhn, D. (2010). Teaching and Learning Science as Argument. *Science Education, 94*(5), 810-824.

Kuhn, D., & Udell, W. (2003). The development of argument skills. *Child Development, 74*(5), 1245–1260. DOI:10.1111/1467-8624.00605

Kuhn, D. and Udell, W. (2007). Coordinating own and other perspectives in argument. *Thinking and Reasoning*, *13*, 90-104.

Lambirth, A. (2009). Ground rules for talk: the acceptable face of prescription. *The Curriculum Journal, 20*(4), 423-435. DOI: 10.1080/095851709034244971

Lefstein, A., & Snell, J. (2011). Classroom discourse: The promise and complexity of dialogic practice. In S. Ellis & E. McCartney (Eds.), *Applied Linguistics and Primary School Teaching* (pp. 165-185). Cambridge: Cambridge University Press. DOI:10.1017/CBO9780511921605.018

Lefstein, A. and Snell, J. (2020). Linguistic ethnographic analysis of classroom dialogue. In N. Mercer, R. Wegerif and L. Major (Eds.). *The Routledge International Handbook of Research on Dialogic Education. London:* Routledge (pp. 63-75). DOI: 10.4324/9780429441677

Lewens, T. (2015). *The Meaning of Science*. London: Penguin

Lincoln, Y. and Denzin, N. (Eds.) (2000). *Handbook of Qualitative Research* (2nd edition). London: SAGE

Linell, P. (2003). *What is dialogism?* Retrieved from: http://cspeech.ucd.ie/Fred/docs/Linell.pdf

Lipman, M. (1980). *Mark*. Institute for the Advancement of Philosophy for Children

Lipman, M. (1987). *Elfie*. Institute for the Advancement of Philosophy for Children

Lipman, M. (1991). *Thinking in education*. Cambridge: Cambridge University Press

Lipman, M. (1998). *Philosophy goes to school*. Philadelphia: Temple

Lipman, M. (2003). *Thinking in education* (2nd edition). Cambridge: Cambridge University Press.

Lipman, M. and Sharp, A. (1978). Some educational presuppositions of philosophy for children. *Oxford Review of Education*, *4*(1), 85-90

Lipman, M., Sharp, A. and Oscanyan, F. (1980). *Philosophy in the classroom* (2nd edition). Philadelphia: Temple University Press

Littleton, K., Mercer, N., Dawes, L., Wegerif, R., Rowe, D. and Sams, C. (2005). Talking and thinking together at Key Stage 1. *Early Years, 25*(2), 167–182. DOI: 10.1080/09575140500128129

Littleton, K. and N. Mercer. (2013). *Interthinking: Putting talk to work.* London: Routledge.

Maine, F. (2014). 'I wonder if they are going up or down': Children's co-constructive talk across the primary years, *Education 3-13*, *42*(3), 298-312, DOI: 10.1080/03004279.2012.685083

Maine, F. (2015). *Dialogic readers children talking and thinking together about visual texts.* London ; New York: Routledge

Maine, F. & Hofmann, R. (2016). Talking for meaning: The dialogic engagement of teachers and children in a small group reading context. *International Journal of Educational Research 75*, 45– 56. DOI: 10.1016/j.ijer.2015.10.007

Maguire, M. and Delahunt, B. (2017). Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars. *All Ireland Journal of Teaching and Learning in Higher Education, 3*. Retrieved from https://ojs.aishe.org/index.php/aishe-j/article/viewFile/335/553

Martens, E (2009). Children's philosophy and children's theology – A family resemblance. In G. Iversen, G. Mitchell and G. Pollard (Eds.) *Hovering over the face*

of the deep: philosophising and theologising with children. (pp. 107-116). Munster: Waxmann

Martens, E. (2013). *Philosophieren mit Kindern. Eine Einführung in die Philosophie.* (translated by S. Rimmington, 2017). *Philosophising with children: An introduction to philosophy*. Stuttgart: Reclam.

Matthews, G.B. (1980). *Philosophy and the young child.* Cambridge, Mass: Harvard University Press

Matusov, E. (2011). Irreconcilable differences in Vygotsky and Bakhtin's approaches to the social and the individual: An educational perspective. *Culture and Psychology 17*(1), 99-119

Mayring, P. (2004). Qualitative content analysis. In U. Flick, E. von Kardoff and L. Steinke (Eds). *A companion to qualitative research*. London: SAGE

McCall, C. (2009). *Transforming thinking: Philosophical inquiry in the primary and secondary classroom*. London: Routledge

McCall, C. and Weijers, E. (2016). Back to basics: A philosophical analysis of philosophy in philosophy with children. In M. Gregory, J. Haynes and Murris, K. (Eds.) *The Routledge International Handbook of Philosophy for Children.* (pp. 83-92). London: Routledge

McCandliss, B. Kalchman, M and Bryant, P. (2003). Design experiments and laboratory approaches to learning: Steps toward collaborative exchange. *Educational Researcher, 32*(1), 14-16

Mercer, N. (1995). *The Guided construction of knowledge.* Clevedon, UK: Multilingual Matters

Mercer, N. (2008). Talk and the development of reasoning and understanding. *Human Development*, *51*, 90-100. DOI: 10.1159/000113158

Mercer, N., Wegerif, R. and Dawes, L. (1999). Children's talk and the development of reasoning in the classroom, *British Educational Research Journal 25*(1), 95-111.

Mercer, N. and Littleton, K. (2007). *Dialogue and the development of children's thinking. A sociocultural approach.* London: Routledge

Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist, 50*, 741-749. DOI:10.1037/0003-066X.50.9.741

Michaels, S. O'Connor, C. and Resnick, L. (2008). Deliberative discourse idealized and realized: Accountable talk in the classroom and in civic life. *Studies in the Philosophy of Education, 27,* 283-297. DOI: 10.1007/s11217-007-9071-1

Middleton, J., Gorard, S., Taylor, C., & Bannan-Ritland, B. (2008). The “compleat” design experiment: from soup to nuts. In A. E. Kelly, R. A. Lesh, & J. Y. Baek (Eds.), *Handbook of design research methods in education*. New York: Routledge

Millett, Stephan & Tapper, Alan. (2012). Benefits of Collaborative Philosophical Inquiry in Schools. *Educational Philosophy and Theory, 44*(5). DOI: 10.1111/j.1469-5812.2010.00727.x.

Misak, C. (2000). *Truth, politics, morality: Pragmatism and deliberation*. London: Routledge

Misak, C (2007). Pragmatism and Deflationism. In C. Misak (Ed.) *New Pragmatists*. Oxford: Clarendon Press

Mishra, R (2015). From monologue to dialogue: Interpreting social constructivism with a Bakhtinian perspective. *International Journal of Progressive Education, 11*(1), 73-81

Moate, J. (2014). Dialogic struggles and pedagogic innovation. *Pedagogy, Culture and Society 22*(2), 295-314

Mohr Lone, J. and Burroughs, M. (2016*). Philosophy in education: Questioning and dialogue in schools.* Lanham: Rowman and Littlefield Education

Murris, K. (2015). Posthumanism, philosophy for children and Anthony Browne’s “Little Beauty” *Bookbird: A Journal of International Children’s Literature, 53*(2), 59-65 DOI: 10.1353/bkb.2015.0030

Murris, K. (2016). *The posthuman child: Educational transformation through philosophy with picturebooks*. London: Routledge

Nagel, T. (1987). *What does it all mean? A very short introduction to philosophy* Oxford: OUP

National Literacy Trust (2016). *State of the Nation and Impact Report 2015/16.* Retrieved from http://www.literacytrust.org.uk/assets/0003/6318/Impact_report_2015-16_spreads_FINAL.pdf

Norris, N. (1997). Error, bias and validity in qualitative research. *Educational Action Research, 5*(1), 172-176, DOI: 10.1080/09650799700200020

Nystrand, M., Gamoran, A., Kachur, R. and Prendergast, C. (1997). *Opening dialogue: Understanding the dynamics of language and learning in the English classroom*. New York, NY: Teachers College Press.

Ofsted (2014). *School Inspection Report Kings Ash Academy.* Retrieved from https://reports.ofsted.gov.uk/inspection-reports/find-inspection-report/provider/ELS/138773

Ofsted (2015). *School Inspection Report Marine Academy Primary.* Retrieved from https://reports.ofsted.gov.uk/inspection-reports/find-inspection-report/provider/ELS/139604

Oracy Cambridge (2016). *Oracy Skills Framework.* Retrieved from http://www.educ.cam.ac.uk/research/projects/oracytoolkit/oracyskillsframework/OracySkillsFramework.pdf [Last Accessed: 02/12/17]

Pardales, M. and Girod, M. (2006). Community of inquiry: Its past, present and future. *Educational Philosophy and Theory*, *38*(3), 299-309. DOI: 10.1111/j.1469-5812.2006.00196.x

Patton, M.Q. (2014). *Qualitative research & evaluation methods. Integrating theory and practice. (4th edition).* Thousand Oaks: SAGE

Pearce, J., Stones, A., Reiss, M.J. & Mujtaba, T. (2019) 'Science is purely about the truth so I don't think you could compare it to non-truth versus the truth.' Students' perceptions of religion and science, and the relationship(s) between them: religious education and the need for epistemic literacy. *British Journal of Religious Education* DOI: 10.1080/01416200.2019.1635434

Peirce, C. S. (1955). Ed. Buchler, J. *The philosophical writings of Peirce*. New York: Dover

Perelman, C. (1980). *Justice, Law, and Argument: Essays on Moral and Legal Reasoning*. Trans. W. Kluback et al. Boston: Reidel.

Phillipson, N. and Wegerif, R. (2017). *Dialogic education: Mastering core concepts through thinking together*. London and New York, Routledge

Popkewitz, T. (2015) (Ed). *The 'reason' of Schooling: Historicizing curriculum studies, pedagogy and teacher education.* New York: Routledge

Pring, R. (2000). *Philosophy of Educational Research.* London and New York: Contiunuum

Raven, J., Raven, J., and Court, J. (1998). *Coloured Progressive Matrices*. Oxford: Oxford University Press

Reznitskaya, A., Glina, M., Carolan, B., Michaud, O., Rogers, J. and Sequeira, L. (2012). Examining transfer effects from dialogic discussions to new tasks and contexts. *Contemporary Educational Psychology, 37(*4), 288-306. DOI: 10.1016/j.cedpsych.2012.02.003.

Roche, M. (2011). Creating a dialogical and critical classroom: reflection and action to improve practice. *Educational Action Research, 19*(3), 327-343. DOI:10.1080/09650792.2011.600607

Rojas Drummond, S., Mazon, N., Fernandez-Cardenas, J. and Wegerif, R. (2006). Explicit reasoning, creativity and co-construction in primary school children's collaborative activities. *Thinking Skills and Creativity 1*(2), 84-94. DOI: 10.1016/j.tsc.2006.06.001

Rojas Drummond, S. (2010). Understanding and promoting argumentative practices in educational contexts. *Human Development, 53*(2), 98-104. DOI:10.1159/000288211

Ryan, S. V., von der Embse, N. P., Pendergast, L. L., Saeki, E., Segool, N., and Schwing, S. (2017). Leaving the teaching profession: The role of teacher stress and educational accountability policies on turnover intent. *Teaching and Teacher Education*, 661-11. DOI:10.1016/j.tate.2017.03.016

Sandoval, W. and Morrison, K. (2003). High school students' ideas about theories and theory change after a biological inquiry unit. *Journal of Research in Science Teaching*, 40(4), 369- 392.

Scholl, R. (2014). Inside-out pedagogy: Theorising pedagogical transformation through teaching philosophy. *Australian Journal of Teacher Education, 39*(6), 89-106. DOI: 10.14221/ajte.2014v39n6.5

Schommer-Aikins, M. and Easter, M. (2009). Ways of knowing and willingness to argue. The Journal of Psychology, 143(2), 117-132. DOI: 10.3200/JRLP.143.2.117-132

Schwarz, B. and De Groot, R. (2007). Argumentation in a changing world. *International Journal of Computer Supported Collaborative Learning, 2,* 297-313. DOI: 10.1007/s11412-007-9020-6

Schwarz, B. and Baker, M. (2017). *Dialogue, argumentation and education. History, theory and practice.* Cambridge: Cambridge University Press

Seale. C. (2002). 'Quality issues in qualitative inquiry'. *Qualitative Social Work*, *1*(1), 97-110. DOI: 10.1177/147332500200100107

Sedova, K. (2017). A case study of a transition to dialogic teaching as a process of gradual change. *Teaching & Teacher Education*, (67): 278-290. DOI: 10.1016/j.tate.2017.06.018

Schank, R. C., & Abelson, R. P. (1977). *Scripts, plans, goals and understanding: An inquiry into human knowledge structures*. Lawrence Erlbaum.

Sharp, A. (1987). What is a 'Community of Inquiry'? *Journal of Moral Education,* 16(1), 37-45

Sinclair, J. Mc. H. and Coulthard, M. (1975). *Towards an analysis of discourse: The English used by pupils and teachers*. Oxford: Oxford University Press.

Smith, J. E. (1983). Community and reality, in: E. Freeman (Ed.), *The Relevance of Charles S. Pierce* La Salle: Hegeler Institute

Spaemann, R. (1983). *Philosophische Essays. Erweiterte Ausgabe*. Stuttgart: Reclam

Splitter, L.J. (2000). Concepts, Communities and the Tools of Good Thinking. _Inquiry: Critical Thinking Across the Disciplines_ 19 (2):11-26. DOI: 10.5840/inquiryctnews20001929

Splitter, L. J., and Sharp, A. M. (1996). The practice of philosophy in the classroom. In R. F. Reed & A. M. Sharp (Eds.), *Studies in philosophy for children: Pixie* (pp. 285–314). Madrid: Ediciones De La Torre.

Sprod, T. (1998). I can change your opinion on that: Social constructivist whole class discussions and their effect on scientific reasoning. *Research in Science Education, 28*(4), 463–480. DOI:10.1007/BF02461510.

Stagnatti, K., Bailey, A., Hudspeth Stephenson, E., Reynolds, E. & Kidd, E. (2015). An investigation into the effect of play-based instruction on the development of play skills and oral language. *Journal of Early Childhood Research 14*(4), 389-406. DOI: 10.1177/1476718X15579741

Storme, T. and Vlieghe, J. (2012). The Experience of Childhood and the Learning Soiety pp. 13-29 In N. Vansieleghem and D. Kennedy (Eds.). *Philosophy for Children in Transition: Problems and Prospects* (pp. 13-29). Chichester, UK: Wiley-Blackwell

Taggart, G., Ridley, K., Rudd, P. and Benefield, P. (2005). *Thinking Skills in the Early Years: A Literature Review.* National Foundation for Education Research (NFER). Retrieved from: https://www.nfer.ac.uk/publications/TSK01/TSK01.pdf

Thompson, P. (2012). Both dialogic and dialectic: Translation at the crossroads. Learning, Culture and Social Interaction, 1(2), 90-101. DOI: 10.1016/j.lcsi.2012.05.003.

Todd, S (2003). *Learning from the other: Levinas, psychoanalysis and ethical possibilities in education.* Albany: State University of New York Press

Todorov, T. (1984). *Mikhail Bakhtin: The dialogical principle*. Manchester: Manchester University Press

Topping, K. and Trickey, S. (2014). The role of dialogue in philosophy for children. *International Journal Of Educational Research*, *63,* 69-78*.* (Special Issues: Representing Diversity in Education: Student identities in contexts of learning and instruction & Classroom-Based Talk). DOI: 10.1016/j.ijer.2013.01.002

Toulmin, S.(1958). *The uses of argument.* Cambridge: Cambridge University Press

Tubbs, N. (2005). *Philosophy of the Teacher*. Oxford: Blackwell

Van de Pol, J., Mercer, N. and Volman, M. (2018). Scaffolding student understanding in small-Group work: Students' uptake of teacher support in subsequent small-group interaction. *Journal of the Learning Sciences.* DOI: 10.1080/10508406.2018.1522258

Van den Akker, J., Gravemeijer, K., McKenney, S., & Nieveen, N. (Eds.). (2006). *Educational design research*. London: Routledge

Vansieleghem, N. (2014). What is philosophy for children? From an educational experiment to experimental education. *Educational Philosophy & Theory, 46*(11), 1300-1310. DOI: 10.1080/00131857.2013.771442

Vansieleghem, N. and Kennedy, D. (2012). *Philosophy for children in transition: Problems and prospects.* Chichester, West Sussex: Wiley-Blackwell.

Vrikki, M., Wheatley, L., Howe, C., Hennessy, S. & Mercer, N. (2019). Dialogic practices in primary school classrooms. *Language and Education*, 33(1), 85-100. DOI: 10.1080/09500782.2018.1509988

Vygotsky, L. (1962). *Thought and language*. Cambridge, MA: MIT

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press

Walton, D. N. (1989). *Informal logic. A handbook for critical argumentation.* Cambridge: Cambridge University Press

Walton, D. (1996). Argument structure: A pragmatic theory. Toronto: University of Toronto Press

Warren, C. (2001). Qualitative Interviewing. In J. Holstein and J. Gubrium (Eds.). *Handbook of Interview Research* (pp. 83-103). Thousand Oaks: SAGE. DOI: 10.4135/9781412973588.d7

Weber, B (2012). Childhood, philosophy and play: Friedrich Schiller and the interface between passion, reason and sensation. In Vansieleghem, N. and D. Kennedy (Eds.) *Philosophy for Children in Transition: Problems and Prospects* (pp. 66-81). Chichester, West Sussex: Wiley-Blackwell

Wegerif, R. (2006) Dialogic education: What is it and why do we need it? *Education Review, 19*(2), 58-66

Wegerif, R. (2007). *Dialogic, education and technology. Expanding the space of learning*. Springer

Wegerif, R. (2008). Dialogic or dialectic? The significance of ontological assumptions in research on educational dialogue. *British Educational Research Journal*, *34*(3), 347-361.

Wegerif, R (2009). *What does it mean to teach thinking? Philosophy for Children as an example of dialogic education* [Draft for ICPIC 2009 Conference Proceedings]. Retrieved from: http://elac.ex.ac.uk/dialogiceducation/userfiles/Santi%20ICPIC%20Wegerif%20D1.pdf

Wegerif, R (2010). *Mind-Expanding: Teaching for Thinking and Creativity*. Buckingham, UK: Open University Press/Mcgraw Hill

Wegerif, R. (2011a). Towards a dialogic theory of how children learn to think, *Thinking Skills and Creativity*, 6(3), 179-190, DOI: 10.1016/j.tsc.2011.08.002.

Wegerif, R. (2011b). From dialectic to dialogic. In T. Koschmann (Ed.) *Theories of learning and studies of instructional practice* (pp. 201-221). New York: Springer Science + Business Media

Wegerif, R. (2016). *What is dialogic space?* [Blog post]. Retrieved from: www.rupertwegerif.name/blog/what-is-dialogic-space

Wegerif, R. (2017, June 29th). *Dialogic and dialectic: clarifying an important distinction* [Blog post]. Retrieved from: http://www.rupertwegerif.name/blog/dialogic-and-dialectic-clarifying-an-important-distinction

Wegerif, R., Fujita, T., Doney, J., Perez Linares, J., Richards, A. and van Rhyn, C. (2017). Developing and trialling a measure of group thinking. *Learning And Instruction*, *48*, 40-50. DOI: 10.1016/j.learninstruc.2016.08.001

Weinstein, M. and Broda, M. (2009). Dialectics, dialogics and other ways of reading us. *Cultural Studies Of Science Education*, *4*(4), 799-801. DOI: 10.1007/s11422-009-9187-4

Wells, G. and Arauz, R. M. (2006). Dialogue in the Classroom. *Journal of the Learning Sciences, 15*, 379-428. DOI: 10.1207/s15327809jls1503_3

Wertsch, J. V. (1991). *Voices of the Mind: A Sociocultural Approach to Mediated Action*. Hemel Hempstead: Harvester Wheatsheaf.

Wiliam, D. and Black, P. (1998) *Inside the black box: Raising standards through classroom assessment.* Retrieved from: https://www.rdc.udel.edu/wp-content/uploads/2015/04/InsideBlackBox.pdf

Wilkinson, A. (1968). Oracy in English teaching. *Elementary English, 45*(6), 743-747. Retrieved from: http://www.jstor.org/stable/41386406

White, E. J. (2014). Bakhtinian dialogic and Vygotskian dialectic: Compatabilities and contradictions in the classroom?. *Educational Philosophy & Theory*, *46*(3), 220-236. doi:10.1111/j.1469-5812.2011.00814.x

White, J. (2012). Philosophy in primary schools?. *Journal Of Philosophy Of Education*, *46*(3), 449-460. DOI:10.1111/j.1467-9752.2012.00860.x

Wittgenstein, L. (1961). *Tractatus logico-philosophicus.* New York: Humanities Press.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Child Psychology & Psychiatry & Allied Disciplines, 17*(2), 89–100. DOI: 10.1111/j.1469-7610.1976.tb00381.x

Worley, P (2010). *The if machine.* London: Bloomsbury

Worley, P. (2016, February 2nd) Why use stories for doing philosophy with children? *Bloomsbury Education Blog*. Retrieved from: https://bloomsburyeducation.wordpress.com/2016/02/02/peter-worley-why-use-stories-for-doing-philosophy-with-children/

Appendix

Appendix 1: Notes from exploratory teacher discussion, chapter 4

Teacher 1 “I like doing circle time with them. I’d like to do more, I’ve got some talkers that don’t like writing.” Not as good at listening – like giving own ideas. “don’t know what to do about the quiet ones – it’s like pulling teeth”. Seemed open to the approach but not exactly how to do it

Teacher 2 difficult class, a number of children with additional needs “all I’ll be able to do to get them through their phonics check” Difficult relationship with teaching assistant – little support in class, thought that this affected how much time she had with kids.

About dialogue: “can do it with the right kids” – seemed to view dialogue as an ideal “I’d love to spend more time chatting to them” – interesting use of word chatting. But maybe in the sense of getting to know?

Teacher 3 “I’m interested in Philosophy with Children – not that I’m a philosopher” Thought that the kids would get a lot out of it – reasons why: sharing their ideas, break from English and maths – nice to do something different. “We’ve got smaller class sizes so it could work well” Led to discussion about if he would do PwC – said he wasn’t sure. Thought he would have to ask head about training. Also though it might be easier because it as just him teaching that year group – “I don’t have to get everyone on board”.

Teacher 4 I mentioned the word dialogue, but then later said dialogic and she was confused – thought it meant logic. Might be seen as a specialist term by teachers? I felt that it added a bit of distance in the conversation as I had to explain it. “It’s not that I don’t consciously do it, but there are other things that I have to do” Said that her class has input at the start of a lesson and again for plenary at the end . “sometimes we do a bit” – it was hard to do it all the time because there’s always something else going on. “we dip in and out, like sometimes we talk about the news”

Appendix 2: Sample PwC questions to stimulate discussion

Is it wrong to eat meat?

Should the school canteen only serve vegetarian food?

Should you always tell the truth?

Could robots be as real as people?

Should we treat robots the same as people?

Is it better to make 1 person really happy or 10 people a little bit happy?

If you had all your memories put into a robot, would that robot then be you?

Are we responsible for everything we do?

Would you rather be rich or clever?

What is most important quality in a friend?

Should you always do everything you are told?

How can you decide whether or not to do what you are told?

Is the most important thing in life to be happy?

Is there such a thing as the most important thing in the world?

Is there such as thing as the best book ever written?

Could we live in a world without maths/numbers?

Appendix 3: Teacher information MOU and consent form

Dear Mrs [redacted]

I am carrying out research into children's discussion skills and the effect of a philosophy intervention.

Following our meeting, we have agreed the following:

I will come into your Year 2 class after the Easter holidays on Wednesday afternoons at 1.30.

I will deliver the sessions to the class using the Playground of Ideas framework which you will be observing

I will interview you at key points to find out what you think of the sessions

I will also interview the children to find out what they think of the sessions.

Please note that the name of the school, your name, and the names of the children in the class will all be anonymous. Code names will be used in place of real names. All information and video recordings will be kept as a password protected file in a secure space.

Thank you very much for your time and for taking an interest in my research project. If you have questions at any time, please email me at [redacted], or my supervisor, Professor Rupert Wegerif at [redacted].

Please could you sign the consent from on the following page and return it to me.

Yours Sincerely,

Laura Kerslake

Consent

I have been fully informed about the aims and purposes of the project.

I understand that:

- there is no compulsion for me to participate in this research project and, if I do choose to participate, I may withdraw at any stage;
- I have the right to refuse permission for the publication of any information about me;
- any information which I give will be used solely for the purposes of this research project, which may include publications or academic conference or seminar presentations;
- If applicable, the information, which I give, may be shared between me and my supervisors in an anonymized form;
- all information I give will be treated as confidential and I will make every effort to preserve my anonymity.

…….. ……
(Signature of teacher) (Date)

.....
(Printed name of teacher)

…… ……
(Signature of researcher) (Date)

……
(Printed name of researcher)

Appendix 4: Parent Consent and Information for Iteration 2a

Dear Parents and Carers,

I am doing PhD research at the University of Exeter, looking at how have philosophy discussions in class develops children's discussion skills. The title of my project is:

Developing children's oracy skills: the dialogic effect of a philosophy intervention in primary schools

Either Mrs Wilson or I will be leading the discussions, using ideas that the children will find familiar. An example of the sort of discussions we'll be having has been sent out with this form – and I hope that you find some of the questions interesting too!

I will also be interviewing some of the children in groups to find out what they think about their philosophy sessions.

I will video record some of the sessions so that I can look at how the children are discussing the questions. All of the recording will take place in the classroom as part of the whole class discussion.

Just to reassure you, the information will only be used as part of my PhD work and related conferences and journal articles. Each child will be given a code name so they are anonymous, and all information (name and age) about them will be kept confidential. Mrs Wilson and I will explain the project to the children so that they understand why I'm in their classroom.

However, if you would rather your child's information wasn't used at all then please return the form at the bottom to the class. You or your child can change your mind at any time.

If you have any questions, please feel free to send me an email on [redacted], or a call on [redacted]. My supervisor at the university is Professor Rupert Wegerif and he can also be contacted with any questions at [redacted]

Yours Sincerely,

Laura Kerslake

_ _

I **would not** like my child to participate in this research project. I understand that this does not mean that they will be able to withdraw from the philosophy discussion which takes place as a usual classroom activity.

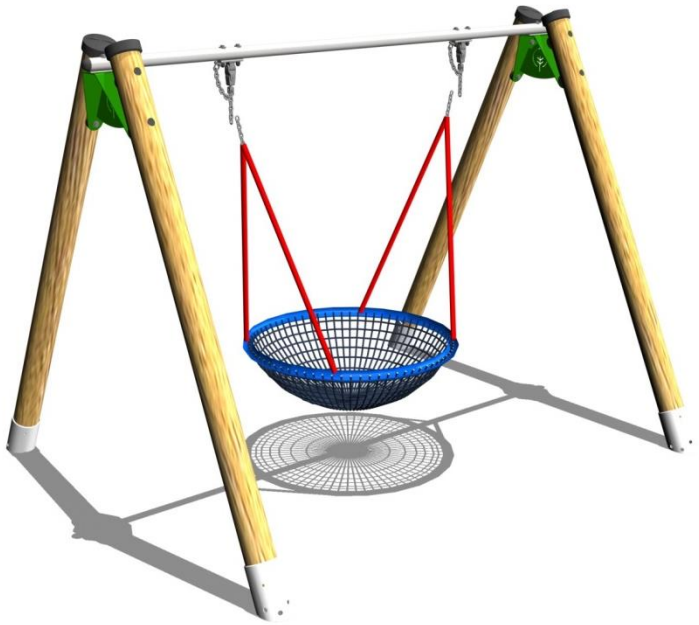
Child's name_____

Parent/Carer name_____

Parent/Carer signature_____ Date_____

Example of material for philosophical discussions

The Swing



What do I think? What do you think?

The Swing encourages children to give their opinions. It helps them to see that people have different answers to some questions. One of the questions is 'If you put your brain in a robot's body, would it still be you?' If they think 'yes' they are on one side of the swing, if they think 'no' they are on the other side. If they are not sure they are on the swing and can go backwards and forwards as they try to make up their mind.

Some example questions

Is it better to make one person very happy or ten people a little bit happy?

Would you rather be rich or clever?

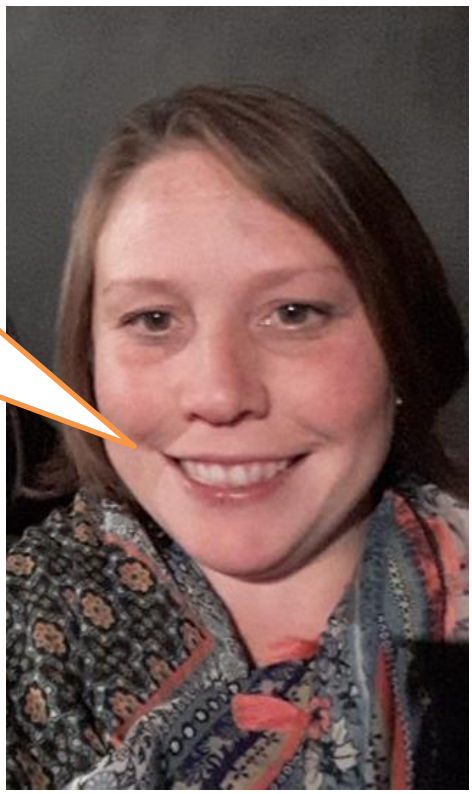
Is it ever ok to tell a lie?

What is the most important quality in a friend?

Appendix 5: Information poster for Year 2

Hello!

My name is Mrs Kerslake, and I am a teacher and a researcher at the University of Exeter.



I am going to come in to your class on Wednesdays and do some philosophy sessions with you.

I am really interested in how you talk together so sometimes I will be writing things down or using a video camera.

If you have any questions, please ask your teacher or me.

I'm looking forward to meeting you!

Appendix 6: Interview Schedule with Teacher for Iteration 2a

Interview schedule 2.5.17 Laura Kerslake/Ms Eliot

How do you think the children have responded to the Playground of Ideas pictures so far?

Notes: pace, way of introducing, impact, different children

What do you think of the philosophical questions so far?

Hamster meat

Can animals think?

Would you rather be rich or clever?

If you put your brain in a robot's body, would it still be you?

What do you think of the session plans?

Usefulness, content, timing etc

Have you got any suggestions about what I can do to improve the sessions?

Appendix 7: Group Interview Transcription for Iteration 2a

Group Interview with Laura Kerslake (LK) and Year 2 children: Emma (E), Jonathon (J), Lucy (L), Finley, (F), Jane (Ja) and Caleb (C)

The interview took place in the library which leads in to the Year 2 classroom. There were a number of people coming into the library, as well as the noise from the open classroom door.

The interview was planned to last 20 minutes, but the class finished their previous activity behind schedule, so there were only just over 10 minutes for the interview until the children's lunchtime.

L: Um, I've just got a quick question, you know the Greeks, um, do quite a lot about philosophy, did they invent it, did they like, were they the strongest people who were into it.

LK: Well, they were some of the first people who start thinking about a lot of the ideas that we're talking about now

L: And is it also like, over the years been passed down and getting better and better, like, the Plymouth University and stuff

LK: Do you think that's what's been happening, it's getting better and better, do you think that's what's been happening?

(a number of voices): Yeah

L: Cause the things you bring in and the questions and the 'Would you rather' things are really good

LK: So you like the Would you rather things?

L: Yeah, cause I've got his book and it's got all these Would you rather questions in and my dad does some to me as well

LK: Ok, Kit, what do you think?

J: Well, kind of, I like the Would you rather questions

LK: Do you? What do you like about them?

J: Cause they just inspire you and they ask what you're like and I think that people should learn a lot about philosophy because it's showing what people are basically on on the playground so I think we should just make sure that we should get lots of learning and education about philosophy. If they ask a question they answer back to give them a - basically, a - their education and what they…and that happens and it's really good.

LK: OK. Emma, what do you think? Do you like the Would you rather questions?

E: Yeah, I do. I um, next time we do would you rather do you think I could ask a question?

LK: Yes of course, have you not had a go yet?

E: No

LK: Oh, I'm sorry, I didn't realise that.

E: I want to have a go where I can ask a question

LK: Do you like asking questions?

E: Yeah, I like asking questions. I'm quite interested in philosophy because I'm like – I wasn't at the first philosophy session, I was like, well, oh that's going to be interesting because I thought I'm going to be really good at that because I thought it was going to be something about fossils because I'm really good at that.

LK: OK, I see. OK, Finley…?

F: I like it when you stand, going on the swing – the play equipment, especially the swing because you get to think about, your brain gets to think about something that's really hard, like the Jack and the Beanstalk one, that was really hard.

LK: That was a a hard one? Was it all right that it was hard?

F: Yeah

L: Kind of because it gets your brain warmed up and it gets kind of, it's quite…you know like, it's like in maths…

C: Hey you stole my words, I was going to say that

LK: Maybe you're just thinking together

J: There's this questions I want to ask you

LK: Ok.

J: Would you rather have an elemental power, or wings?

LK: What's an elemental power?

L: It's like fire, lightening, earth and ice, those are the main four

LK: Ah, well that's tricky, because I like the idea of an elemental power but I also like being able to fly

L: If you were flying though, think about it, if you had wings and you faced a dragon or something…

LK: You could zoom off

L: But that's like you're being a scaredy cat

LK: That's true. Right, we haven't got very long before lunch, so…Jane, what do you think about the pieces of play equipment or the philosophy questions?

Ja: Yes I like it because everybody has, they can actually, like I like the slide because sometimes I do get very nervous of talking so it kind of encourages me, um, cause I have stage fright sometimes.

LK: Ok

Ja: And it encourages me to talk

J: Are you on the bottom slide then?

L: I think she's on the top because if you're on the bottom slide then you can just go down it like – boring

LK: (to Jane) What do you think?

L: Cause the top bit's the scariest bit

Ja: I think probably the top

LK: OK. So you've got that feeling of 'oh, I'm not sure I want to do this?

Ja: Yeah

LK: So even when you're not saying anything – which is fine – do you still feel like you're taking part?

Ja: Yeah. Cause you're listening, aren't you?

LK: Yeah, there are other ways of taking art, not just talking, aren't there? OK, so Caleb?

C: I like would you rathers because when they say, when they ask you a question you have to think because you say because and it makes you think more

LK: Ok, so you think giving reasons is a good thing?

C: Yeah

LK: Jonathan, what do you think?

J: Well, what's important about would you rathers are they just create your mind and philosophy tells you and they all know what you would wish and they would try and with that for you if they can

L: I've got a question for you and it's a would you rather. Would you rather be able to swim or would you rather be able to fish and there is a jungle nearby so there is fruit but you're getting bored of all that

LK: I think I'd rather be able to swim. Right, Finley, what do you like?

F: I like the Would you rather questions because I like hearing all of the questions. Like when X asked Lucy if she'd rather be a sock or a box

LK: I know, that's a funny one to think about

L: That was the hardest one ever! I said I would rather be a box because I wouldn't want to be a smelly sock

LK: Right, I'm going to go round now because we've only got a couple of minutes before lunch…what's your favourite piece of play equipment? Let's start with Jane.

Ja: I think it's the slide

LK: Ok, Finley, what about you?

F: The Swing.

LK: And why's that?

F: I like you can choose this way or that

LK: Emma, what about you?

E: Well, I don't really have a favourite piece because I really like all of them. I quite like the slide or the swing or the seesaw. The seesaw, yeah!

LK: And what about you, Caleb?

C: I like the swing

LK: What do you like about the swing?

C: I like that you can share your ideas

LK: What about you, Jonthan?

J: The swing because I like going over the Grand Canyon

L: What?

LK: Lucy, what's your favourite piece of play equipment?

L: I like the Crowsnest, I think I'm a bit cheeky because I look over and keep spying on Sky but also I like the seesaw because I like strong questions because my mind is thinking and I'm saying in my mind 'oh I didn't think of that and I'd better add something else on' and I'm thinking that the great philosophers must have been really good for that.

LK: Ok, thank you for that. Well, it's your lunchtime now so thank you all.

Appendix 8: Researcher Reflective Journal: Reflections on Playground of Ideas Sessions

Session (number)	Researcher comments at the time of the sessions	Other thoughts from data/additional sources
1	Children grasped the idea of the swing quickly, that they could move from one side of the classroom to the other or stay in the middle depending on their point of view. We started off with quite simple questions – would you rather be a tiger or a shark and then ended up with the more philosophical 'If you put your brain in a robot's body, would it still be you?'	A number of children wrote in their questionnaires that they liked the swing. I also think it's good because they get to move, which is important in the discussion, one child commented that they liked being able to get up when they wanted.
2	The image was quite distracting for the children and they talked about wanting to go to the place where the slide is and go on those slides. Maybe change to a simpler image? They seemed to get the idea about being brave and sitting at the top of the slide, but I'm not sure they grasped it as relating to speaking and sharing their ideas. I think we need to revisit this to make sure the children understand that it's being brave about speaking up in front of everybody.	In their questionnaires, a number of the children took the view that you were brave if you were at the top of the slide, a bit brave in the middle or not brave if you were at the bottom.
3	I think this worked as a concept – talking about the purpose of a climbing frame – to get higher – seemed to be understood. Starting off with a game in which the children had to Say 'I went to the shops and I brought…' was good in that they had to listen carefully to each other to make sure no item was repeated. However, it did not really convey the idea of building on each other's ideas. It might have been better to do a story, something like 'Once there was a tiger' to which each child had to add a detail. The stimulus material – a can of 'hamster meat' – was confusing in that they did not understand it was for people as opposed to hamster food. It was also quite difficult for them to grasp the ideas around eating pets vs other animals and use the climbing frame at the same time. I think it would be better to do this at a later point, once the climbing frame had been	The hamster meat question is a really interesting one – at the time I thought that it hadn't gone well, and the teacher's comment was that she was 'really scared' of that question. What was striking though, was that a number of the children raised it as something they liked talking about, despite having done a few other sessions in between. Makes me wonder if perhaps they liked talking about it because it was challenging or because it was something they hadn't thought about before. Following my session, I was ready to take it out of the session plans, but now I think that I will leave it in and adjust its position so that it takes place once the climbing frame has already been established.

	established a bit more and to stick with simpler ideas while it is introduced.	
4	I revised the climbing frame session in order to make it easier to implement- I thought of doing a talking tips strategy, so that when they say one of a number of phrases, such as 'Following on from what….says, I think, I agree and I disagree. Every time they said one of those phrases, I gave them a tick, and they had to get 10 ticks to get to the top of the climbing frame. It worked really well, and they were really engaged with the session	I spoke to Steve Hoggins of the Philosophy Foundation at the ICPIC Madrid conference. He liked the idea, but said that when he'd tried similar things, the children were much more focussed on saying one of the phrases than they were about what they next said. So they might say I disagree…, but then go on to say something that shows they actually agree. Wonder then if this is a bit instrumental, as Biesta and Karin M argue against? Not sure how else to do it though? Those phrases are useful ones for the children to know, and they listened to each other much better. I was also thinking that it would be good if the children could generate some phrases of their own at some point in the course?
5	The Seesaw. This session focussed on giving reasons for things. I focussed on responsibility for this one, with the idea of 'are we responsible for everything we do?' The stimulus was that some children were late for school, and they all gave a reason. The children had to decide whether or not it was a good reason.	
6	I wanted to focus on the seesaw again to make sure they really had a good idea of it from last week . This week I set the class up in opposition to me. I said that I had a favourite book, How to Train your Dragon, and I thought that was the only book that we should read in year 2. I didn't have very good reasons, I just kept saying it was really good, it was my favourite book and I thought everyone should read it. So I was on one end of the seesaw. The class had to think of reasons to be on the other end of the seesaw. The children seemed to enjoy the	On further reflection, and after talking to Ed Weijers at ICPIC, as well as reading Schwarz and Baker's book on argumentation, I worry that I hadn't set this session up well enough. I set it up so that the kids had to argue against me. And it focussed on giving reasons but there was definitely no real philosophical content in it. I think I will change this session for the next version of the intervention.

	session and came up with some good reasons. However, some of the children seemed to want to please me and be on my 'side' of the seesaw so they said that they agreed with me but they did not have any good reasons – maybe that's an issue with this type of question?	
7	I did a version of the trolley problem for this session. I spoke to the teacher about it beforehand and explained the trolley problem. She said she thought that the class were too young to cope with the idea of a train hitting people, and suggested I make it less threatening. So I did some power point slides of the trolley problem but with a bike that was out of control. It was a child riding the bike and he either had to continue and crash into one person or swerve and hit 5. The class really struggled with the idea of a thought experiment, even once I'd explained it to them. They kept suggesting that he put his foot down on the bike, or steer round the one person because there was room on the path, or just crash on to the grass instead so they wouldn't hurt anyone. I think the trolley problem is an interesting session, but I'll have to rethink it. I had a look online, and saw a youtube video of someone doing the trolley problem with young children, they were using a wooden trainset and people. I think that's a really good idea, so I'm going to set up a toy train set and take pictures of that, maybe make a video to act a stimulus. If I make a recording, I could upload it to the website, or put it on youtube or something. I guess not all schools have access to youtube though. Maybe the website would be best.	
8	Jack and the Beanstalk – the class teacher suggested to me that I should do a session based on some of the children's class work. They'd been reading J and the B and the CT suggested the question 'was it ok for Jack to steal the golden egg?'. The kids really engaged with this, maybe	

	because they had spent a term doing work around the book? Several children pointed out that the giant had stolen the hen from Jack's father first so it wasn't really stealing. Another child pointed out that in some of the stories, the giant had stolen it, and in some versions he hadn't – she said that you couldn't tell if it was right or wrong until you knew the situation. I felt that this discussion was one of the most philosophical we'd had, because without realising it, the children were discussing utilitarianism. This session would only work if the class were really familiar with a text, but it also shows that the content can come from the curriculum, with the discussion skills from the PoI.	
9	In this session I asked the children to reflect on the sessions. We also did Would you rather, but in small groups of 4 or 5 rather than the whole class. This worked quite well as they all got to have a go. Not so good in terms of listening and speaking in the whole class, but good in the sense of participation. I might suggest that teachers mix and match the two things to get the benefits of both. The children mentioned several pieces of equipment they liked, and it seems that they have a good grasp of the meanings behind the equipment. One girl, who has been very engaged with the sessions said, though, that it would be good if the sessions could be more active. In recent weeks I had felt that the children were less engaged – the novelty of the equipment had worn off and it was a bit harder to control their behaviour. I'm going to write more activities into the session plans where the children get to move around and maybe work in small groups a bit more.	

Appendix 9: Transcription of Interview with Class Teacher in Iteration 2a

Transcription of Interview between Laura Kerslake (LK) and the Class Teacher (CT).

Interview follows 6 weeks of intervention sessions, delivered by the researcher and observed by the class teacher

Interview date: 2/5/17

The Interview took place during the school lunch time in the foyer of the school reception. It was a busy environment with lots of children and a few staff members passing by from the school hall to the playground. There were a number of occasions where children stopped to talk to the CT. These were omitted from the transcription.

LK: So firstly, how do you think the kids have responded so far in the philosophy sessions?

CT: I think really positively and quite maturely. I've been really surprised, some of the questions seem quite grown up and challenging, even though their answers reflect their developmental sort of stage that they're up to. I think they're doing really well, and I think that having the, um, pictures and having the sentence starters really really helped them. Last week I was really impressed that they kept looking at the board and really trying to use them

LK: Yeah, because I felt that when we did this one the week before, like I said with the hamster meat

CT: Oh yeah

LK: It was so much for them to try and process in one go

CT: I think that's it, that's the key, doing a tiny step at a time.

LK: Yeah, exactly. So what do you think about the pictures in general?

CT: Yeah, really good. I think that – I think (emphasis) that they've, that's really helped them a lot. Because they quite often say to you don't they, about the swing, or –

LK: Yeah, yeah

CT: I think this is the hardest one, the climbing frame building on each other's ideas, but that's exactly where they need to be – it's appropriate for them to be doing that. And they really loved the slide, didn't they?

LK: Yeah, they did, I wasn't sure if it was too distracting a picture for them, because I mean, like, I tried to find the highest looking slide I could find

CT: I think, no, because they will have been on slides like that, won't they, and they'll know that feeling. I think if you did just a really plain slide it might not have the same (inaudible due to loud noise in background)

LK: Yeah. What do you think of the philosophical questions so far? They're the ones that we've had (researcher shows sheet of philosophical questions to teacher)

CT: Yeah, I was really scared with the hamster meat one but actually it worked really well didn't it (laughs). Yeah, I think they're definitely about right for where they're up to. I was thinking about maybe how you could use the ones from fairy tales, you know, from books that they're reading ,characters . We do Jack and the Beanstalk, I was thinking afterwards well actually there were some philosophy questions that could have come out of that. Should Jack have stolen the hen – Was it ok that Jack stole the golden hen?

LK: That's really nice. Yeah, I really like that idea actually, using ideas from –

CT: Is it ok for giants to eat children! (laughs)

LK: Yeah! (laughs)

CT: Maybe not that, but um,

LK: (laughs)

CT: I don't know if that's the same with a lot of the stories that we read with them, if that would be a good way in.

LK: That might be nice actually, so yeah, maybe at some future point I could look at your plans for literacy

CT: Yeah, great.

LK: You know the 'if you put your brain in a robot's body, would it be you?

CT: Yeah

LK: I had a whole series of robot questions that I did with a class that came out of the book , you know No-bot the Robot?

CT: Oh yeah!

LK: It came out of that.

CT: Brilliant

LK: You know, can robots be happy and sad, and how much they're like us, that kind of thing

CT: That's fascinating if you did that because I thought, oh maybe they're going to find that way too hard, but they didn't at all, and they, and some of them came with some, they were really thinking about it weren't they.

LK: Yeah, and it's quite nice to hear that, you know, cause like you said, you don't know to what extent their going to get the concept.

CT: No, but I think they've done really well, definitely.

LK: But I really like that idea though, so I might, kind of, take some fairy tales and then come up with something from that, cause there's loads of scope isn't there?

CT: Yeah, there's lots of moral dilemnas in fairy tales aren't there?

LK: Yeah, yeah, I quite like, you know, could the big bad wolf ever be good, or…

CT: Yeah, yeah, is it ok for the wolf to eat the pigs

CT: Yeah. It's just that thing isn't it, putting on to a character. Although I wouldn't want it always to be like that, I think it's good they have to relate it on to themselves

LK: Yeah, but it would be nice to do some

CT: Yeah

LK: And so, the session plan that I've done (LK shows CT example of session plans) This is the one I've got for tomorrow, it's the same format as the other ones. So, I'm going to do the top talking tips again, because I thought it'd be nice to cement that

CT: Yeah, definitely, I think we'll probably end up doing that in every session! (laughs)

LK: Yeah, we'll probably just have them as speech bubbles up in the future but it's nice to do it again

CT: Yeah definitely

LK: But the question we're going to do is 'How is real life different from a dream?

CT: Oooh, I like it!

LK: You know ,things like, how do you know you're not dreaming right now, and does real life ever feel like a dream, those sorts of questions

CT: It's amazing isn't it, cause I remember at university doing, some philosophy module that was about that. It's true, and you think, oh little children, they couldn't, but they can, can't they

LK: Yeah

CT: Yeah

LK: So it'll be interesting to hear what they say tomorrow

CT: Yeah, I'll be really interested in that

LK: SO these session plans, they've got a little bit of information at the top, then a fairly kind of detailed plan, then the resources, and then questions for discussion, so, when I do the next cycle of this in September, it's going to be me giving a resource pack to teachers and kind of –

CT: Go for it

LK: I'm not going to be there. So in terms of, what you think about being able to work from that, what do you think?

CT: Do you know what I think? You might need to watch a video of a session.

LK: Ah, ok

CT: Because, well, I don't know if that's just me, but I find it much easier to – if I see someone teaching something, like I've seen you teaching my children, I'd be much more able to – I'd put it into practice. I think the problem with written resources is that they can be interpreted so many different ways, and um,

LK: It's hard to know as I write it, I mean, that's why I'm doing this really, it's hard to know what somebody's going to make of that and you can't – I don't want to make it so detailed that you know, it's like reading from from a script. So no, that's a good idea. Yeah, so I could put a CD as part of the resource pack

CT: Yeah, I recommend, yeah, could if they could see, if they could see the way you do it I think that would really help them.

LK: Ok, thank you.

LK: What do you think about the other things? Because obviously I've put these – I mean, most teachers won't have much philosophy background, or might not have, so just things like concept questions, unpicking that question a bit

CT: Yes, yeah, I think so. I think that's really helpful. Yeah, cause I could quite easily get stuck. If you gave me that first question I would definitely get stuck.

LK: Ok

CT: Yeah, it's really really helpful. Um, I reckon, I think that, you know your lovely pictures, making those into an interactive whiteboard, like either a power point or a smartboard resource, that'd be really easy to do

LK: Yeah

CT: Um, casue the children are quite used to having to look up on the board for things, when I've got them on the floor they're picking them up…

LK: Yeah, it is a bit distracting isn't it?

CT: Yeah, I don't know if that's just the adults, whether, it's the children as well

LK: Yeah, they could just as easily sit in a horseshoe shape and leave a gap to look at it

CT: Yeah

LK: And once it's all there, especially once we've introduced them all and we can refer back to them. It's more…

CT: Yeah, and it's kind of a bit bigger in a way.

LK: So would you prefer, I mean, I can start doing that from now on

CT: Yeah, that would work. I mean, I think it's still nice for them to have their own copies as well but it's just.

LK: Yeah, ok

CT: I wonder whether it's too…I was thinking about going to a play park and actually, to do a little video clip of them

LK: Yeah…oh, that would be really nice

CT: To almost model it, make it more dimensional

LK: Yeah, I really like that idea, cause then we could do it as part of the – the video, then they wouldn't have to imagine it, they could actually

CT: Cause I'm sure, most parks have all of those items. Maybe not a slide quite like that but I'm sure we could get one of them to act it. Yeah, I think you can't underestimate with little ones how much they need that, like with little ones it's easy to presume that they understand concepts and they maybe don't completely, or they've just go the basic idea but not…

LK: Ok, and so the only other two pieces of equipment that I'm going to do are the slide and roundabout.

CT: Yeah, normally there'd be a roundabout, yeah

LK: Well, how do you feel about maybe later on maybe taking some of them to a playground.

CT: Yeah, I'm sure there's a park just, there'll be a park somewhere in Ashburton won't there?

LK: Yeah

CT: I'm sure [the head teacher] would be up for that because it's only walking there isn't it

LK: That would be lovely

CT: That would be so cool wouldn't it, because you could get them on the swing, show how they, ask them a question and then do slow motion

LK: That's a great idea, thank you for that

CT: You could get them climbing up the climbing frame – mind you, we've got a climbing frame on our trail outside.

LK: So we could do that one easily

CT: Actually, we've got a slide on our grounds

LK: Have you?

LK: Once they kind of know those sentences, I could get one to stand on the bottom rung and another to stand further up and say 'Following on from what so and so says, I think…

CT: Yeah, I think that would really help to bring it to life

LK: Yeah, and also, like, fun, just putting that in as a package

CT: Yeah, that would really help teachers to be able to show these not just as pictures

LK: That would be quite a nice introductory session. Thank you! That's a great idea

CT: I'm excited now for you (laughs)

LK: (laughs). And so, and I'll deliver the session tomorrow, is it ok if I bring something to record?

CT: Yeah, absolutely

LK: And so how do you feel about taking over delivery of the sessions after that?

CT: Yeah,yeah that's ok. I'm not sure I'll be as good as you but I'll give it a go

LK: I'm sure you will be

CT: (laughs)

LK: So, that's the reason I'm doing this really, just so you can help me know…

[bell rings]

CT: Oh, that's the end of lunch, I've got to get back

LK: No, that's fine, thank you so much for giving up your lunch time

CT: That's all right…see you on Wednesday?

LK: Yes, see you then.

Appendix 10: Coding Process for the Teacher Interview

Initial descriptive coding fragments:

really positively and quite maturely [children's competence]
really surprised [children's competence]
questions seem quite grown up and challenging, [PoI session engagement]
answers reflect their developmental sort of stage [children's competence]
doing really well [children's competence]
having the, um, pictures and having the sentence starters really really helped them. [PoI session engagement]
really impressed [children's competence]
so much for them to try and process [children's competence]
tiny step at a time [PoI session engagement]
they quite often say to you don't they, about the swing [PoI session engagement]
hardest one, the climbing frame building on each other's ideas [PoI session engagement]
where they need to be – it's appropriate for them [children's competence]
really loved the slide, didn't they [PoI session engagement]
too distracting a picture [slide, PoI session engagement]
they'll know that feeling. [slide, PoI sessions]
I think if you did just a really plain slide it might not have the same [PoI session engagement]
I was really scared with the hamster meat [philosophical questions]
actually it worked really well [PoI session engagement]
definitely about right for where they're up to [children's competence]
thinking about maybe how you could use the ones from fairy tales [philosophical questions]
I was thinking afterwards well actually there were some philosophy questions that could have come out of that. Should Jack have stolen the hen – Was it ok that Jack stole the golden hen? [teacher suggestion]
really like that idea actually [researcher collaboration with teacher]
Is it ok for giants to eat children! [teacher suggestion]
if that would be a good way in [teacher suggestion]
maybe at some future point I could look at your plans for literacy [researcher collaboration with teacher]
fascinating if you did that because I thought, oh maybe they're going to find that way too hard, but they didn't at all [children's competence]
they were really thinking about it weren't they. [children's competence]
you don't know to what extent their going to get the concept [children's competence]
I think they've done really well, definitely. [children's competence]
there's loads of scope isn't there? [philosophical questions]
there's lots of moral dilemnas in fairy tales aren't there? [philosophical questions]
could the big bad wolf ever be good, or… [philosophical questions]
is it ok for the wolf to eat the pigs [philosophical questions]
putting it on to a character. Although I wouldn't want it always to be like that, I think it's good they have to relate it on to themselves [philosophical questions]
I'm going to do the top talking tips again, because I thought it'd be nice to cement that [PoI session engagement]
I think we'll probably end up doing that in every session! [relating to wider curriculum]
How is real life different from a dream? CT: Oooh, I like it! [philosophical questions]
It's amazing isn't it, cause I remember at university doing, some philosophy module that was about that. It's true, and you think, oh little children, they couldn't, but they can, can't they [children's competence]

Do you know what I think? You might need to watch a video of a session [teacher suggestion]
– if I see someone teaching something, like I've seen you teaching my children, I'd be much more able to – I'd put it into practice. [teacher practice]
I think the problem with written resources is that they can be interpreted so many different ways [teacher practice]
It's hard to know as I write it, I mean, that's why I'm doing this really [researcher practice]
I don't want to make it so detailed that you know, it's like reading from from a script. [researcher practice]
Yeah, I recommend, yeah, could if they could see, if they could see the way you do it I think that would really help them. [teacher suggestion]
most teachers won't have much philosophy background, or might not have [researcher positioning]
If you gave me that first question I would definitely get stuck. [teacher compentance]
your lovely pictures, making those into an interactive whiteboard…children are quite used to having to look up on the board for things, when I've got them on the floor they're picking them up… [teacher suggestion]
bit distracting isn't it [researcher agreement]
I was thinking about going to a play park and actually, to do a little video clip of them [teacher suggestion]
To almost model it [teacher practice]
Yeah, I really like that idea, cause then we could do it as part of the – the video, then they wouldn't have to imagine it [researcher practice]
I think you can't underestimate with little ones how much they need that, like with little ones it's easy to presume that they understand concepts and they maybe don't completely, or they've just go the basic idea but not… [children's competence]
Yeah, I think that would really help to bring it to life [teacher suggestion]
Yeah, that would really help teachers to be able to show these not just as pictures [teacher suggestion]
a nice introductory session. Thank you! That's a great idea [researcher response]
I'm excited now for you [teacher response/emotion]
I'm not sure I'll be as good as you but I'll give it a go [teacher competence]

Coding terms:
Children's competence
Philosophical questions
Teacher practice
Teacher competence
Teacher suggestions
Researcher practice
Researcher response
PoI session engagement
Related to wider curriculum
Emotion
Items of play equipment (swing, slide, climbing frame, seesaw, crowsnest)

Thematic coding:
Teacher perspective of children
Practitioner expertise
Relationship between researcher and teacher
Impact on teaching/learning practice

Appendix 11: The Playground of Ideas Session Plans

Week 1: The Swing Session Plan

Teacher information

This session will introduce the Playground of Ideas framework to the children and starts with the Swing. The Swing introduces children to giving opinions – the children could be on one side of the swing or the other depending on their opinion, or on the swing if they can't decide. The focus for this session is on giving different opinions and changing your mind, and other pieces of equipment will introduce more later.

Lesson Plan:

· Have all the children sat in a circle or in a horseshoe, either on chairs or on the floor
· Explain that we're going to have a discussion where they will share their ideas and listen to others' ideas. In pairs, ask them to think of some talk rules (see page 7) for the discussion. Then take suggestions, writing them on a big piece of paper. Remind children of the talk rules as necessary throughout the sessions!
· Have enough copies of the swing to put around the circle so that all children can see it clearly
· Explain that for some questions, there isn't an easy 'right' or 'wrong' answer, so children might have different ideas about the same question. Use a 'Would you rather…' question to give an example, e.g. would you rather be invisible or have the ability to read minds. Ask for hands-up opinions on this and then take two different examples.
· Explain that (Jack) thinks he'd rather be invisible, so he's on this side of the swing, but (Beth) thinks she'd rather be able to read minds, so she's on that side. Then ask if someone can't decide, and explain that means that they are on the swing and could go from one side to the other.
· Ask the class to get up and move to one side of the circle if they would be on the 'invisible' side of the swing, one side if they would be on the 'reading minds' side of the swing, and in the middle if they can't decide. Discuss what would happen if someone wanted to change their mind – it's ok to move to a different side of the swing
· Then they come back into the circle.
· Ask another question: 'If you put your brain into a robot's body, would it still be you? The children should discuss first in pairs Repeat the process above, taking an example of a yes and no and an undecided, then asking the class to move to sides of the swing
· Bring the children back into the circle and use the remaining time to discuss the question.

Resources:

10 copies of The Swing picture (page 28)
Flipchart paper/whiteboard for writing down talk rules

Questions for discussion:

Would you rather be invisible or be able to read minds?
If you put your brain in a robot's body, would it still be you?

Week 2: The Slide Session Plan

Teacher information

This session will continue to introduce the Playground of Ideas framework to the children. First we'll recap last week and giving opinions by being on the Swing. Then we'll introduce the Slide, which helps children to recognise they are feeling nervous about speaking, lets them know that is ok, and encourages them to be brave.

Lesson Plan:

· Have all the children sat in a circle or horseshoe, either on chairs or on the floor
· Play Would you rather…' for 5 minutes
· Explain that we're going to have a discussion where they will share their ideas and listen to others' ideas. Remind them of the talk rules from last week.
· Ask the children to tell you what we did in the session last week. Make sure that they reference the Swing, giving your opinion and changing your mind
· Then ask another question: 'Is it better to make one person very happy or ten people a little bit happy. Give them some thinking time. Then remind them that if we are on one side of the Swing you think 'one person very happy' on the other side is 'ten people a little bit happy' and not sure is in the middle. They move to sides of the room: ask two or three children for reasons.
· Then bring them back into the circle. Have enough copies of the Slide to put around the circle so that all children can see it clearly
· Ask them how they would feel to be sat at the top of the big slide, ready to go down. They can discuss it in pairs. Bring them back together.
· Ask a couple of children how they would feel – excited, scared, etc. Ask: what would that feel like in your body?
· Explain that sharing your ideas in front of the whole class can be like that – some people find it exciting but other people find it really scary. Then ask: if you were sitting at the top, feeling scared – heart beating fast etc., then you went down, how would you feel when you got to the bottom? (proud of yourself, relieved, etc.)
· Tell the children we are going to share some ideas. Ask another question: 'Would you rather time travel to the past or the future'. In pairs they discuss for a few minutes Then the children come together again in the circle.
· Ask: who is sitting at the top of the slide, feeling a bit nervous, but wants to try going down the slide and sharing their ideas?
· Take a few answers, especially from children who haven't contributed before

Resources:

Copy of the Swing on a display board
Copy of the talk rules from last week
10 copies of The Slide picture (page 29)

Questions for discussion:

Is it better to make one person very happy, or ten people a little bit happy?
Would you rather time travel to the past or the future?

Week 3: The Climbing Frame

Teacher information:

This session will introduce the Climbing Frame, which focuses on building on each other's ideas. The aim is to get the children to listen carefully to each other and see if they can add more information to each other's ideas. The question is 'How is real life different from a dream?' There are concept questions at the bottom to help keep the discussion going.

Lesson Plan:

· Have all the children sat in a circle or horseshoe, either on chairs or on the floor
· Play 'Would you rather…' for 5 minutes
· Tell the children that today we have a new piece of play equipment to go on—the climbing frame
· Hand out Climbing Frame pictures so that every child can see one. Tell the children that on a real climbing frame they climb to the top, and in the Playground of Ideas you get to the top of the climbing frame by listening to each other's ideas and adding more detail or information.
· To help them climb the climbing frame, they will have 'Top Talking Tips' – sentences to help them build on each other's ideas, e.g. I agree with ….. because; I disagree with ……. because; Following on from what….. said, I think….. Write these sentences on the board so the children can refer to them.
· Each time someone says that, we put a tick on the board. If we get enough ticks (say, 10), we can climb to the top of the climbing frame
· Tell the children we are going to discuss a philosophical question: How can we know that real life is different from a dream?
· First go on the Swing. Ask children to move to one side of the classroom if they think we can know if real life is different from a dream, in the middle if they're not sure, and to the other side if they think we can't always tell that real life is different from a dream.
· Then tell the children we're going on the Slide and ask someone to share their ideas (one each from yes, maybe and no)
· Bring the children back into the circle. Now we're going on the climbing frame. We're going to discuss the question 'How can we know that real life is different from a dream'. Remind them of the Top Talking Tips.
· Start the discussion, using some of the concept questions below.
· At the end, add up the ticks and ask the children to vote if they think they have climbed the climbing frame

Resources:

Copy of the Swing and Slide on a display board, with the talk rules
10 copies of The Climbing Frame picture (page 30)
Flipchart/whiteboard

Questions for discussion:

How is real life different from a dream?

Concept questions:

How can you know you're not dreaming now?
Does real life sometimes feel like a dream?
Does a dream sometimes feel like real life?

Week 4: The Climbing Frame Session Plan (2)

Teacher information

This session will reinforce the Swing and Slide pictures, by discussing a philosophical question and referring to the Climbing Frame to practice building on each other's ideas. The philosophical question starts with a stimulus—a fake tin of 'tinned hamster' for people to eat. This will provoke a reaction in the children—probably 'eeeewwwww'. The point of the discussion is to get past their initial reaction and think about why they had that reaction at first. Some of the children might know that in different countries people eat different foods that others might think strange—but what does strange mean?! The discussion might centre on eating meat, how we treat animals, pets vs food etc.
This session can be also helpful for leading on to other discussions later about how it's important to stop and think about things they come across and not act on their initial reaction to things (like playground issues, friendships falling out and so on). It can help children to understand that it's important to see things from another's point of view.

Lesson Plan:

· Have all the children sat in a circle or horseshoe, either on chairs or on the floor
· Play 'Would you rather…' for 5 minutes
· Remind the children of the Slide and being brave with their ideas
· Tell the children we are going to discuss a philosophical question, but first you want then to have a look at something: have the stimulus can of 'hamster meat' to pass around the circle. Explain that this is a tin of hamster that they could eat for their tea.
· Ask the children 'Would it ever be ok for anyone to eat a hamster?'
· Ask them to go on the Swing and move to one side of the classroom if they think yes, to the other side if they think no, and to the middle if they think maybe.
· Bring the children back into the circle. Prompt with the concept questions at this stage if needed 'Is it any different to eating chicken or beef?' / 'What if there was nothing else to eat?'
· Ask the children to discuss it in pairs then come back into together for the discussion.
· Tell the children that they will be going on the Climbing Frame again today. Have the sentence starters on the board and remind the children of these, and that you will be giving them a tick every time you hear one of the phrases: Following on from what… says; I agree; I disagree
· At the end of the discussion, let the children know they have thought really well, that it's easy to see something like the tin of hamster meat and think 'eeewww' without really knowing why. (also let them know it's really a tin of something else!)

Resources:

Copy of the Swing and Slide and Climbing Frame on a display board
Climbing Frame sentence starters displayed on a flipchart/whiteboard
Tin of 'Hamster Meat' (tin of chopped tomatoes or similar with the label removed and a 'tinned hamster' label put on it – see page 33 for label)

Questions for discussion:

Is it ever ok for anyone to eat a hamster?

Concept questions:

What about if it was someone's pet? Or your pet? What if you knew its name?

Why do we eat certain meat and not other meat?

Week 5: The Seesaw

Teacher information

This session will introduce the Seesaw to the children. The idea of the seesaw is that it gives children a way to decide how good the reasons are that other children give.
Just like on a real seesaw, if the children decide a reason is a good one, it is heavier and it makes one side of the Seesaw go down. As this is the introductory session for the Seesaw, the question is a simple one (Would you rather be rich or clever?) to get them thinking about coming up with really good reasons.
The children will probably think that the more reasons there are, the more one side of the seesaw goes down. This is absolutely fine as a starting point—but introduce the idea that just one reason might be so good, that it can make one side of the seesaw go down by itself.

Lesson Plan:

· Have all the children sat in a circle or horseshoe.
· Play 'Would you rather…' as before for 5 mins.
· Show them the Seesaw pictures, and ask them to tell you about a seesaw – what does it do? (get the idea that if something heavy goes on one side it goes down, or if things on each side weight the same then it is balanced)
· Tell the children that reasons can be heavy or light too – if something is a really good reason then it's heavy. Give the example of two children who haven't done their homework. One says: I had a stomach bug and I was being sick so I couldn't do my homework. The other says: I wanted to watch TV, so I couldn't do my homework
· If you put a reason on each end of the Seesaw, which is the best, heaviest reason? (You can draw this out on the flipchart if it makes it easier)
· Now ask a new 'Would you rather' question: Would you rather be rich or clever?
· Ask children to go on the Swing, and move to one side of the classroom if they think rich, the other side if they think clever, and in the middle if they are not sure.
· While they are standing, ask all the children to think of 1 reason why they chose their answer, and keep it in their heads.
· Bring the children back in to the circle.
· Lay out a strip of masking tape all the way across the circle to act as the Seesaw.
· One end is reasons for 'rich', the other is reasons for' clever'
· Ask 2-3 children to sit on each end and give their reason for 'rich' or 'clever'
· The children sitting round in the circle discuss the reasons – which are good reasons/less good reasons. Remind children of the talk rules if children are feeling victimised at having their reasons discussed
· The children finally decide if the 'rich' or 'clever' side of the Seesaw goes down – or if it is balanced

Resources:

Copies of the Swing, Slide and Climbing Frame on display
10 copies of the Seesaw picture (page 31)
Flipchart/whiteboard
Masking tape

Questions for discussion:

Would you rather be rich or clever?

Week 6: The Seesaw (2)

Teacher Information

The question for this week is 'Is it ever ok to tell a lie?' We will go on the Seesaw so that they can explore reasons for 'yes' and 'no'. This week will involve some small group work, with some reasons that have already been written down that the children can sort onto sides of the Seesaw.

In philosophical terms, there are two main ideas about the ethics of lying. The first is that it is always wrong, it doesn't matter why you lie, it's just wrong. This is what Kant said. The second idea is that sometimes it's ok to lie, it depends on the outcome. So, for example, if someone planned a special surprise for you and you didn't like it, maybe you should say you did, so that you don't hurt their feelings. This is called utilitarianism, and the main idea is that you can only tell if something is right or wrong by the consequences it has – nothing is right or wrong in itself.

Session Plan

· Have all the children sat in a circle or horseshoe.
· Play 'Would you rather…' as before for 5 mins.
· Tell the children that we are going on the Seesaw again and ask them to recall why we go on the Seesaw.
· Tell the class that you've already asked some children 'Is it ever ok to tell a lie?' and you've written their reasons down.
· Ask the children to work in groups to put the children's answers on each side of the Seesaw—they have to decide on which side to put the reasons
· Put the children in groups of 4 (each with one or more stronger readers in). Give each group a picture of the seesaw and a sheet of reasons. You will also need scissors to cut up the reasons and glue so they be stuck down on the seesaw picture.
· After 10 mins, ask them to bring their seesaw pictures back into the circle. Discuss the results – do they think that the reasons on the 'no' side were better that the reasons on the 'yes' side? Were there any reasons that they thought were really important? Why? Do the children have any other reasons for either side?
· After a few minutes of discussion, ask them to decide – which side of the Seesaw is heavier because it has the best reasons – 'yes it is sometimes ok to tell a lie', or 'no it isn't ever ok'.

Resources

Seesaw pictures and reasons (page 34 –35)
Glue sticks and scissors
Flipchart/whiteboard

Questions for discussion

Is it ever ok to tell a lie?

Concept questions:

Is there anyone you shouldn't tell a lie to?
Is there any such thing as a good lie?
What would happen if people thought it was ok to lie?
Why do we think it's so important to tell the truth?

Week 7: The Lookout Tower

Teacher Information

This session will introduce the Lookout Tower, the idea of which is that children can climb up high to see what other children are going on pieces of Playground of Ideas equipment. It will help them to listen to what others are saying and reflect on what they and others have said

The Train Problem Question used in this session is a well-known problem in philosophy (usually called the Trolley Problem). Using the picture of the toy train set, it asks children to imagine that if the train carries on the track it is on, it will knock over 5 people. They have the choice to switch the train onto a different track where it will only knock over one person. Should they switch it or not? Some people think it's better to switch where it will only knock over one person. Others think that you are wrong to do anything...the train was going that way, after all. Others think it depends on who the people are (children, bad guys, teachers (!), etc.)

Lesson Plan

· Have all the children sat in a circle or horseshoe

· Play Would you rather…' for 5 mins

· Tell the children that we are going to introduce a new piece of play equipment today – the Lookout Tower. Hand out pictures so all children can see one. Ask "What can you do on the Lookout Tower?' Get up high. Explain that you want them to listen really carefully to the other children's ideas so that we notice when they are on a piece of equipment. Give an example – e.g. Last week I noticed that X said 'Following on…' so she went on the climbing frame. Explain that at the end we will go on the Lookout Tower and see what people have noticed.

· Tell the children we have a new problem today. Give groups of children a copy of the train set picture. Ask them what they should do – let the train carry on and knocks into the 5 people or switch the track so it only knocks into 1. Explain that there are no other options—the brakes have failed so it can't stop!

· Go on the Swing. Ask the children to move to one side if they think they should switch the track, the other side if they think they wouldn't, and in the middle if they're not sure.

· Bring the children back to the circle for a pair discussion – giving reasons to each other for their choice

· Then discuss as a class for 10 mins. Remind them to go on the other pieces of equipment—being brave, listening to each other and giving good reasons

· At the end, go on the Lookout Tower and ask if they noticed anyone who went on different pieces of play equipment – or maybe they noticed themselves on a piece of equipment. Model this for children first, telling them what you noticed e.g. 'I noticed that Jack was on the climbing frame because…'

Resources

Copy of previous play equipment on a display board
10 copies of the Lookout Tower (page 32)
10 copies of the Train Problem (page 36)

Questions for discussion

Should you switch the train to a different track?

Concept questions:

Is the number of people the most important thing?

What if the 1 person was a teacher and the 5 were your friends?

Does who the 1 and the 5 are make a difference? What if it were 5 adults and 1 child?

Week 8: The Whole Playground of Ideas

Teacher information

This session carries on with all of the pieces of equipment to reinforce the talk practices that the children have developed over the last few weeks.

Lesson Plan:

· Have all the children sat in a circle, either on chairs or on the floor
· Have a picture of all of the Playground of Ideas equipment on the whiteboard. Ask them to tell you what we do on all of the pieces of equipment to remind them.
· Tell them that we will be going on all of the pieces of equipment today and talk about a new question
· First play 'Would you rather…' as before.
· Tell the children that now we are going to the Playground of Ideas, and the question for this week is: Is there one rule in the world that everyone could agree on?
· Ask the children to discuss this in pairs
· Remind the children that if they might want to go down the Slide even if they're feeling nervous
· Go on the Swing: ask children to move to one side if they think yes, there is one rule, no if they think that there isn't one rule, and in the middle if they're not sure
· Bring the children back into the circle and remind them to go on the Seesaw and give reasons and the Climbing Frame to build on each other's ideas
· The children discuss for around 10 minutes. When someone gives a rule, write it on the flipchart/board to remind everyone
· Finally, at the end, ask the children to go on the Lookout Tower to see if they noticed anyone going on any pieces of equipment. Contribute some names of children that you noticed on pieces of equipment.

Resources:

Copy of the Playground of Ideas pictures on a display board
Flipchart/whiteboard

Questions for discussion:

Is there one rule in the world that everyone could agree on?

Concept questions:

Who could come up with that rule?

What would happen if you didn't follow it?

Could the rule be that there isn't one rule that everyone could agree on?

Week 9: The Whole Playground of Ideas

Teacher information

This session carries on with all of the pieces of equipment to reinforce the talk practices that the children have developed over the last few weeks. The question we will look at today is: Are all of these images art? Can anything be art? There are images to discuss with the children on pages 37-45 and concept questions below to help you stimulate the discussion.

Lesson Plan:

· Have all the children sat in a circle, either on chairs or on the floor
· First play 'Would you rather…' in small groups.
· Tell the children that now we are going to the Playground of Ideas so they have to try and go on all of the pieces of equipment.
· The question for this week is: Can anything in the world be art? Put the images in the middle of the circle where all children can see them.
· Ask the children to discuss the images in pairs
· Remind the children that if they might want to go down the Slide even if they're feeling nervous
· Go on the Swing: ask children to move to one side if they think yes, all of the images are art, no if they think that not all the images are art, and in the middle if they're not sure
· Bring the children back into the circle
· Remind them to go on the Seesaw and give reasons and the Climbing Frame to build on each other's ideas.
· Discuss the images and put them into art/not art/not sure piles on the floor in the middle of the circle – is it easy to decide? Does everyone agree?
· Finally, at the end, ask the children to go on the Lookout Tower to see if they noticed anyone going on any pieces of equipment. Add in some names of children that you noticed on pieces of equipment.

Resources:

Playground of Ideas images on display

Questions for discussion:

Are all of the images art? Can anything be art?

Concept questions:

Can only humans do art?
Does art have to be beautiful?
Is it only art if you like it?
Can it be art if it's an accident? (like the coffee cup stain)
Can things you find in nature be art?
Is it art if someone buys it?
Does it have to be an art gallery to be art?
Just because something is in a gallery, does that make it art?

Week 10: The Children Decide

Teacher Information

This session asks the children what they think about the Playground of Ideas images. Do they think that the images they've been given are right for the different thinking and talking skills? This is when they get to choose! The children get to take ownership of the Playground of Ideas by looking at lots of images of playground equipment and deciding which fits best – for example, which Climbing Frame is best for showing that we build on each other's ideas?

By doing this, they are 'thinking about thinking' and can develop a deeper understanding of the concepts involved. At the end, each group presents on their picture. There is a sheet with some prompts so that all the group can speak—they can self-differentiate and decide who has bigger and smaller speaking roles.

Lesson Plan

· Have the children sat in a circle or horseshoe.
· Play 'Would you rather…' for 5 minutes
· Explain that this is the last Playground of Ideas session and that they get to design their own playground.
· Tell them that we want to make sure that the playground images are the right ones – show the children the images they've been using, ask them to remind you why we go on each piece of equipment, and why that piece of equipment is good for that skill.
· Explain that each group will take one piece of equipment. They will get a sheet with lots of pictures on it, and they will have to decide which is the best picture for showing that thinking or talking skill.
· Tell them that at the end they will give a presentation to the rest of the class about their piece of equipment.
· Put the children into 5 groups and give each group the images of equipment. Give them around 10 minutes to discuss, plus another 5 minutes to practice their presentation. There is a worksheet to help them do this
· Then bring the children back into the circle and each group presents in turn—remind them about going on the slide and being brave with sharing their ideas.

Resources

Pictures of all of the playground images on a display board
Sheets with playground equipment (pages 45-54)
Presentation worksheet (page 55')

Questions for discussion

Which pictures are best for showing thinking and talking skills?

Appendix 12: Answers to Teachers' Questionnaire in Iteration 2b

What do you think of the Playground of Ideas?

About you

How many years have you been teaching in a primary school?

1. 12
2. 3
3. 3
4. 5
5. 10
6. 7
7. 22!!
8. 5

Have you ever taught Philosophy for Children (P4C) before? If so, please could you give some details (resources used and for how long):

1. No
2. No
3. I had a training day, but didn't use anything from it in my lessons
4. No
5. I have a book of thinking games that I've sometimes used with my class
6. No
7. No
8. No, but I've wanted to – colleagues have talked about it

About the Playground of Ideas

Did you complete all 10 Playground of Ideas sessions? If not, please can you give me a bit more detail:

1. Yes

2. Yes

3. Yes

4. Yes

5. Yes

6. Yes

7. Yes

8. Yes

Did you complete the 10 sessions in 10 weeks (apart from school holidays)? If not, please could you say why (this is just for reference – it doesn't matter either way!):

1. It took 12 weeks because of school trips, etc

2. Not quite. It depended on if we'd got through everything else

3. Yes

4. Yes

5. No – I'm a job share and didn't always have time on my days in if there were other things going on

6. Yes

7. Yes

8. No, we did it in a bit longer

If you already do philosophy for children (P4C), or have done it before, please could you tell me how the Playground of Ideas compares to other resources you have used?

n/a

What did **you** think of:

a) The images of the playground equipment?

1. I liked them from the start as it was nice to have pictures to show the children and engage them. I was intrigued to see what they'd make of them during the sessions.

2. I thought the climbing frame was great – it's hard to get them to actually listen to each other, and this really helped.

3. The seesaw was slow going, but I don't think they'd ever thought about good and bad reasons before, so it was really helpful for them once they got the hang of it. The slide was great – I love the idea of it, that children get to think about how they feel about speaking in front of people

4. The slide was great – there were quite a few children who tried to be brave. I've got one little boy who hardly ever speaks, but the other children were using the slide in other subjects to see if he felt brave and wanted to speak.

5. I could see how they'd appeal to the children, so I liked the idea of using them

6. I liked how they connected to each other, and how the playground was pitched for children.

7.

b) The questions for discussion?

1. My first thought was: Interesting and alarming. I thought the hamster meat one might upset them, and I wasn't sure about questions like asking if it was ok to tell a lie or not do what they were told. They surprised me though, they had some amazing discussions,

2. Really engaging. It was nice for me to do something a bit different with the children

3. I liked that there were no right or wrong answers. I don't know how I'd answer some of them!

4. One of the girls in my class cried about the hamster question. But then we had quite a good discussion about why it was upsetting, which she contributed a lot to

5. Generally good. Interesting for me to think about too.

6. Not too advanced for them, which I thought they might be. I was a bit nervous as I didn't know how my class would react, but I wanted to give it a go.

7. I love these sorts of questions, and I was keen to see what my class would think

8. Great!

c) The 'Would you rather…' warm up game?

1. I like it - it gets them thinking and asking questions.

2. Really good – especially for some of the quieter ones as they don't have to say so much but still ask and answer questions

3. We ended up playing this all the time

4. It was great – quick and easy but the kids loved it. I found more questions online and put them around the classroom. I encouraged the kids to ask the questions to people at home

5. Very popular – sometimes a bit distracting

6. A great way to warm them up for the discussions

7. It was really hard for them to think of their own questions, so it was good for them to develop that skills as we went along. I was impressed with their quick thinking by the end!

8. I liked it, especially the way they had to ask each other the next question, it gave me the chance to sit back and listen to them

What do you think **the children** thought of:

d) The images of the playground equipment?

1. They were really interested. I thought they might be more interested in the pictures and less interested in what they meant, but that wasn't the case.

2. Lots of interest

3. They seemed to connect straight away with what they were for. The swing and the slide were really popular

4. The lookout tower seemed to go down well with quite a few of them – it was a good way of getting them to give feedback to each other at the end of the sessions.

5. They loved the swing, or at least getting to move around the classroom. The seesaw was tricky for them, but they seemed to stick with it, probably because they know what a seesaw is for

6. Really engaging, although they all wanted to know where the pictures were taken so they could visit the park! They understood that they were going on the swing etc for a reason

7. They could really relate to the images, we had them up on the wall and they referred to them occasionally in other lessons, so I think they were taking in the meaning

8. Very popular – I gave them a couple of minutes to discuss the picture as they all had playground stories to tell. But I thought this would be another way of getting them talking

e) The questions for discussion?

1. They were really interested. I think that's one of the main reasons why they were so keen on the sessions. I needn't have worried about the hamster meat!

2. Some popular ones in our class were: the robot one, the hamster meat one, and the trolley problem one

3. They were really interested. We got some good discussions, I think because they felt there was a lot to discuss rather than getting it right or wrong.

4. The hamster meat was definitely memorable! They got into all of the questions though, I can't think of one that didn't go down well

5. I think they liked doing something different to usual. I told them it was philosophy, and they didn't know what that was, so it was good that they were all starting out from the same point. It was nice to see some of them get really interested in something that's outside of what we usually do.

6. Seeing kids of this age having these kinds of discussions is great. Some of them came up with ideas that I hadn't thought of, and I definitely didn't think they could do that.

7. They really got into the discussions – so much so that some of them would carry on in the playground after the sessions. I'm sure it got them to think differently. The hamster one deserves a mention as a question that stands out.

8. It seemed to be a good range of questions that could tap into their interests

f) The 'Would you rather…' warm up game?

1. This was so popular – it became a craze for a while. We started to do a regular would you rather for home so they could do it with their parents.

2. They could have played this all day.

3. They definitely got better at it! I could see them struggling to think up questions at the start, but they were quite good by the end

4. It was a bit of a struggle for me to get them to stop playing – everyone wanted a go. We got round this by doing extra would you rather at the end of the day. It was a good incentive to get them to get ready quickly

5. Very popular activity

6. Loved it – getting them to stop was hard, but sometimes we did it in small groups so they all got a turn to ask each other

Do you think that the children's discussion skills changed as a result of the Playground of Ideas sessions? In what way?

1. They were better at listening to each other for sure

2. A few children started sharing their opinions more – they said they were going to try being brave. There was a really nice conversation after one session about how it felt to go down the slide and talk in front of everyone.

3. They started to give more reasons when they gave answers – it can be like pulling teeth to get longer answers, but the climbing frame and the would you rathers got them used to giving reasons more automatically.

4. The lookout tower seemed to make a lot of difference at the end of the sessions, it got them to focus on what had been said, and they were more aware of each other

5. They learned a lot of skills as we went through the play equipment. Giving them examples of language was helpful on the climbing frame, it held the discussion together better, and they got quicker at explaining themselves

6. It depends on which child as some were still more keen to talk, but the ones who didn't were still listening. We had that as one of our talk rules like it said in the book.

7. Listening and giving reasons were two of the biggest changes that I saw.

What did you think about the **quality** of the children's discussion?

1. Better

2. Much better

3. Better. More varied, more interesting. Maybe because they could change their minds?

4. Better reasons, more listening.

5. See above

6. More grown up

7. More joining in from more children

8. Lots of participation in discussions

Did you **enjoy** teaching the Playground of Ideas sessions?

1. Yes – it was the highlight of my week

2. Mostly – I was a bit nervous, and sometimes I felt like the discussion could go anywhere. But it was great.

3. It felt like a bit of an adventure, it was nice to do something different

4. Yes, it was great

5. Yes. It was interesting and entertaining!

6. It was good for me to hear what they think

7. It was great to do something different

8. Yes!

Do you think it changed your teaching? In what way?

1. 'Yes. We teach maths mastery and part of this is children being able to confidently explain their reasons. Playground of Ideas helped with this as the children were encouraged to share their ideas and listen to each other.

2. I try to refer to the equipment in other lessons I teach and the children speak clearly and confidently when joining in discussions.

3. The images are up on the wall, but I don't know how much the children look at them. I'd like to use them in other lessons – when I have the time to think about it!

4. I think it definitely added something to the things we do in the classroom

5. Now I know how good some of them are at discussing their ideas, I ask them to answer more in other subjects

6. I feel like I know the children in my class better. I think that helps teaching them generally.

7.I refer to the slide quite a lot to encourage children to join in when I'm teaching other subjects

8. I'm not sure

Did the discussions from the Playground of Ideas have any impact outside of the Playground of Ideas sessions? Please give some detail.

1. Yes, in maths (see above) And the Would you rathers that went home.

2. Yes, when I use the images in other subjects

3. I think that their listening skills helped in other subjects

4. Sending the would you rather ideas home was nice. I know some of the children had discussions with their parents/siblings about it

5. Better discussions across subjects

6.

7.

8.

Below are a series of statements about the aims of the Playground of Ideas resources. Please could you circle a number to indicate how much you agree or disagree.

1. The sessions helped the children to listen more to each other

Agree	1	2	3	4	5	6	7	8	9	10 **Disagree**

Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Comments:										

2. The sessions helped the children to express their ideas more confidently

Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Comments:										

3. The sessions helped the children to give reasons for their ideas

Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Comments:										

4. The sessions helped the children to think about the weight of their reasons

Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Agree 1	2	3	4	5	6	7	8	9	10	**Disagree**
Comments:										

2. Some of the children, not all
5. They started to

And a final few questions…

Can you think of 2 or 3 children in your class for whom the Playground of Ideas made a particular impression (in any way)? You don't need to give names.

1. One child hardly spoke at all but the other children in the class encouraged him to go on the slide and not just in the sessions but in other times. I thought he might feel pressured, but he seemed to like the attention from the others and started to join in a bit more.

2. I have an autistic boy who joined in with the sessions much more than I thought he was going to and enjoyed the discussions. He dominated sometimes, but other times seemed to get a lot of it. A lot of his learning is done by himself

3. Not sure I can think of any children specifically – they all liked it though

4. A few of the quiet children joined in more, it was nice to hear some different voices

5. I have a child who isn't keen on writing, and his writing age is below where we'd expect him to be, but I thought that he really got to express himself during the sessions and I think it gave him more confidence

6. I think it was nice for all of them to do something different that wasn't based on English and maths. It was nice for me too! They were really excited when it was time to do another session, and they kept trying to guess what play equipment would be coming next.

7. I can think of two girls who got a lot out of the Playground of Ideas. It helped develop their confidence as well as their listening and speaking skills.

8. It was great to see 2 very shy children gain confidence and join in with the last few Playground of Ideas lessons'

1. The last session was really good [in which children selected their own play equipment]. I went round and listened to the groups, hearing some fascinating discussions about why the different pictures were like the skills they'd been practicing.

2. The hamster session

3. Every session where another piece of play equipment was introduced, it was interesting to see how the children would respond. Plus the hamster session

4. They liked discussing the robots.

Appendix 13: Coding of Teachers' Questionnaires, Iteration 2b

Text	Descriptive codes
Time (CP)	Curriculum pressures (CP)
Got through everything else (CP)	
Intrigued (TPV)	Teacher Professional View (TPV)
Climbing Frame (UPI)	Impact of Playground of Ideas (IPI)
Slide (PI)	Engagement with images (EI)
nice to have pictures (EI)	
hard to get them to actually listen to each other (QD/R)	Quality of discussion (QD)
don't think they'd ever thought about good and bad reasons before (QD/CC)	Change in children (CC)
The seesaw was slow going (TPV)	
I love the idea of it (TPV)	
Connected (UPI)	Teacher as learner (TL)
children get to think about how they feel about speaking in front of people (UPI/P)	Change in teacher (TC)
show the children and engage them (EI)	Nature of Inquiry (NI)
this really helped (UPI)	Participation (P)
there were quite a few children who tried to be brave (CC/EI)	Relationships (R)
other children were using the slide in other subjects to see if he felt brave and wanted to speak. (CC)	
appeal to the children (EI)	
playground was pitched for children (EI)	
Interesting (TPY)	
Alarming (TPV)	
nice for me to do something a bit different with the children (TC)	
Really engaging (DQP)	
No right or wrong answers (NI)	
I don't know how I'd answer some of them (TL)	
cried about the hamster question. But then we had quite a good discussion about why it was upsetting, which she contributed a lot to (CC/NI)	
Interesting for me to think about too (TL)	
thought the hamster meat one might upset them (TP)	
surprised me though, they had some amazing discussions (CT/TL)	
Not too advanced for them, which I thought they might be (CT)	
a bit nervous as I didn't know how my class would react (TPV)	
I love these sorts of questions (TPV)	
I was keen to see what my class would think (TL)	
I wanted to give it a go.(TL)	

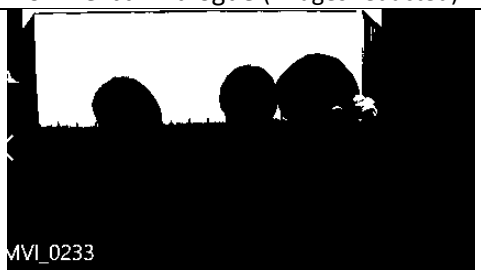
it gets them thinking and asking questions. (QD)	
quieter ones as they don't have to say so much but still ask and answer questions (CC)	
quick and easy but the kids loved it (TPV)	
I found more questions online and put them around the classroom. I encouraged the kids to ask the questions to people at home (CT)	
warm them up for the discussions (QD)	
hard for them to think of their own questions, so it was good for them to develop that skills as we went along (CC/QD)	
I was impressed with their quick thinking by the end (CT)	
it gave me the chance to sit back and listen to them (TPV)	
the way they had to ask each other the next question (QD)	
They were really interested (UPI)	
I thought they might be more interested in the pictures and less interested in what they meant, but that wasn't the case (CT)	
seemed to connect straight away with what they were for (UPI)	
The swing and the slide were really popular (UPI)	
it was a good way of getting them to give feedback to each other at the end of the sessions (TPV)	
The lookout tower seemed to go down well with quite a few of them (EI)	
They loved the swing (EI)	
getting to move around the classroom (UPI)	
seesaw was tricky for them (UPI)	
they seemed to stick with it, probably because they know what a seesaw is for (TPV)	
understood that they were going on the swing etc for a reason (UPI)	
referred to them occasionally in other lessons (WC)	
I think they were taking in the meaning (TPV)	
They could really relate to the images (UPI)	
I gave them a couple of minutes to discuss the picture as they all had playground stories to tell. But I thought this would be another way of getting them talking (QD)	
I needn't have worried about the hamster meat! (CT)	
We got some good discussions, I think because they felt there was a lot to discuss rather than getting it right or wrong. (QD)	
felt there was a lot to discuss rather than getting	

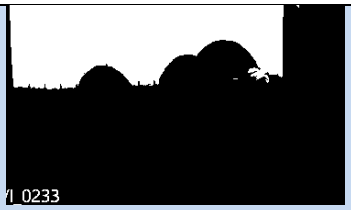
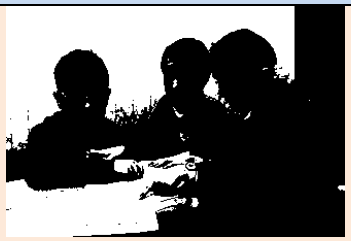
it right or wrong. (NI)	
I think that's one of the main reasons why they were so keen on the sessions.(NI)	
They got into all of the questions though, I can't think of one that didn't go down well (TPV)	
The hamster meat was definitely memorable (QD)	
they liked doing something different to usual (NI)	
. It was nice to see some of them get really interested in something that's outside of what we usually do (NI)	
it was good that they were all starting out from the same point (TPV)	
I definitely didn't think they could do that. (CT/TL)	
Some of them came up with ideas that I hadn't thought of (TL)	
Seeing kids of this age having these kinds of discussions is great (QD)	
so much so that some of them would carry on in the playground after the sessions. (CC/WC)	
I'm sure it got them to think differently (CC)	
The hamster one deserves a mention as a question that stands out. (NI)	
a good range of questions that could tap into their interests (NI)	
We started to do a regular would you rather for home so they could do it with their parents. (CT/WC)	
could see them struggling to think up questions at the start, but they were quite good by the end (CC)	
It was a good incentive to get them to get ready quickly (TPV)	
They definitely got better at it! (CC)	
we did it in small groups so they all got a turn to ask each other (NI)	
They were better at listening to each other (CC)	
A few children started sharing their opinions more (CC)	
There was a really nice conversation after one session about how it felt to go down the slide and talk in front of everyone (UPI)	
They started to give more reasons when they gave answers (CC)	
climbing frame and the would you rathers got them used to giving reasons more automatically. (UPI)	
it can be like pulling teeth to get longer answers	

(TPV)	
they were more aware of each other (CC)	
it got them to focus on what had been said (QD)	
The lookout tower seemed to make a lot of difference at the end of the sessions (CC/EI)	
Giving them examples of language was helpful on the climbing frame, it held the discussion together better (EI/CC)	
They learned a lot of skills as we went through the play equipment (CC/UPI)	
they got quicker at explaining themselves (CC/QD)	
Listening and giving reasons were two of the biggest changes that I saw (CC/QD)	
some were still more keen to talk, but the ones who didn't were still listening (P)	
We had that as one of our talk rules like it said in the book. (UPI)	
Much better (QD)	
Better. More varied, more interesting (CC/QD)	
Better reasons, more listening (CC/QD)	
Maybe because they could change their minds? (TPV/NI)	
More grown up (CC)	
More joining in from more children (QD/P)	
Lots of participation in discussions (P)	
it was the highlight of my week (TPV)	
I felt like the discussion could go anywhere (NI)	
I was a bit nervous. But it was great.(CT)	
it was nice to do something different (CT)	
interesting and entertaining (TPV)	
It felt like a bit of an adventure (TPV)	
It was good for me to hear what they think (TL)	
It was great to do something different (CT)	
I try to refer to the equipment in other lessons I teach (WC)	
We teach maths mastery and part of this is children being able to confidently explain their reasons. Playground of Ideas helped with this (WC/QD)	
I'd like to use them in other lessons – when I have the time to think about it! (CT/CP)	
try to refer to the equipment in other lessons I teach (WC/TC)	
the children were encouraged to share their ideas and listen to each other. (QD/WC)	
Now I know how good some of them are at discussing their ideas, I ask them to answer more in other subjects (TC/WC/P)	
think it definitely added something to the things	

we do in the classroom (TC)	
I feel like I know the children in my class better. I think that helps teaching them generally. (TC/R)	
I refer to the slide quite a lot to encourage children to join in when I'm teaching other subjects (UPI/WC)	
Sending the would you rather ideas home was nice. I know some of the children had discussions with their parents/siblings about it (R)	
. I think that their listening skills helped in other subjects (WC)	
Yes, when I use the images in other subjects (WC)	
Better discussions across subjects (WC/QD)	

Appendix 14: Transcript of group pre-test, Kyle, Martha and Dan

Time	Name	Verbal Dialogue	Non-Verbal Dialogue (Images redacted)
			 Children all gather around paper, D and K using fingers to point at questions. Children don't read the first question out loud.
00.46	K	It'll be pencil, rubber, ruler, then it'll be pencil, then it should be, it'll be D	D circles answer D
00.59	K	So then, 1,2,3,4	
01.04	D	It's got to be one of these	D points to two different answers
01.06	K	It's going to be 1	
01.07	M	It's going to be 1	
01.17	K	This can be 4 so this is 1	D circles answer
01.23	K	And this is	
01.25	D and M	Square, circle, square	Using fingers to point out the pattern
01.27	K	So it'll be square	D circles answer. All three children remain gathered around the paper 
01.35	D	So	Reads question under breath to self
01.45	K	Pour it in, you have a straw, so it'll be that one.	D circles answer
01.48	D	That one's already done	
01.50	K	Do that one	Children are looking at next question, K points to an answer
01.54	D	So it's that, then that, that should be that. This?	
02.05	K	Yeah do that, I think that's right	D circles answer
02.10	K	He's taking a stick and he's making his nest	
02.15	D	The one with three?	
02.18	K	The one with 4, the one with 4 it should be	D circles answer
02.27	D	So, he's writing a message	
02.31	K	He's writing, he folds it in an envelope	
02.34	D	That?	
02.34	K	You should do this	

02.38	K	You should do this	 All three still gathered around paper, but the two boys have moved the paper closer to them. K points at answers
02.40	D	Oh yeah, that	D circles answer
02.41	K	Yeah that, because he's going to put it in, so that's going to be that one because he's writing	
02.50	D	Ok, this one	
02.51	K	So that one's going to be that one, no that one	
			 M has been looking at the previous answer sheet and brings it to the others' attention
02.54	M	You forgot that one	
02.55	K	Oh yeah	
02.56	D	Oh yeah	D brings the previous sheet of paper back
03.10	D	So we have to look	
03.12	K	This one, this one	K taps the answer with his finger and D circles it
03.14	M	That one	K also points to the same answer
03.21	K	It's going to be that one, A. This one, it's going to be bike, that, I think it's C	
03.34	D	Yeah	
03.34	M	Yeah	
03.35	K	Just do C	
03.38	D	Yeah, cause look	D points at the question
03.40	K	Yeah, yeah, yeah	D circles answer
03.45	K	Pepper, salt, salt	Points at answer, D circles answer
04.01	D	(inaudible) is to, as is to - this.	D pauses with the pencil above the paper before he completes the answer
04.09	K	Or it's this	Pointing at different answer
04.10	D	Or this	Pointing at another different answer . M also points at an answer
04.14	K	Do this, because that's what their normal habitat is	D circles answer
04.21	D	Is to, as is to	

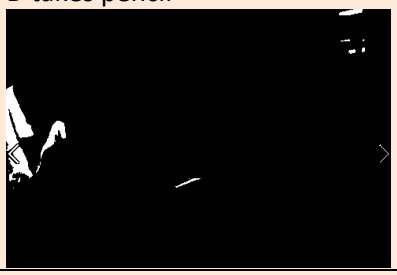
04.23	K	That. Drums, yeah	K and M point at answer, D circles it 
04.28	D	Is to	
04.29	M	That	M points at answer
04.32	K	No, it's to that, it's to that, it's to that	K points to a different answer. D circles K's answer
04.46	K	This is going to be tricky	
04.48	D	It's going to be an is to, is with that	D looks back at previous paper to check the question format
04.54	M	It's that one	M reaches over D's hand to point at an answer
04.54	D	Martha!	
04.56	M	That one	D circles the answer M has pointed to
05.06	M	Ear	
05.07	D	Inaudible	
05.12	M	Would it be an ear because it's an earring	
05.18	D	That's not an ear	
05.21	K	Inaudible	D circles answer
05.23	D	It's fine	
05.26	K	It's the butterfly	
05.28	D	Yeah	Circles answer
05.38	D	Ok, so its that one	
05.43	K	No, it's this one because that's not one of the bears	
05.47	D	Oh yeah, because it's a dolly	Circles answer
05.53	K	That one's the odd one out	
05.55	D	Oh yeah, because that's	
05.56	K	They're triangles, but that one's not	Circles answer
06.02	D	Which one's the odd one out?	
06.02	K and M	That one	Each are pointing to different answers 
06.08	D	That one. (to M) Why do you think that?	D is about to circle the answer that K has pointed to
06.09	M	Because that one -	M points again to her answer
06.10	D	Oh wait, that's the odd one out, because they have waves and that one doesn't	
06.18	K	No but some of them don't have waves	
06.20	D	All of them have waves except for that one	

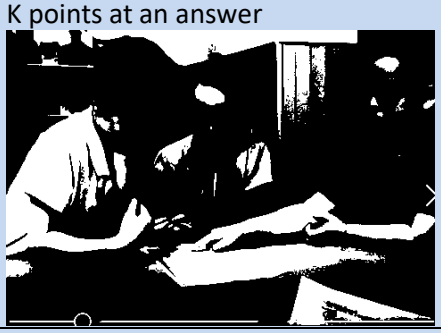
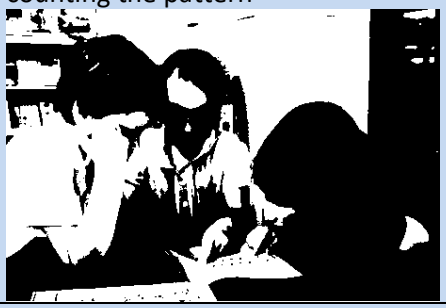
06.25	D	Ok	D circles M's answer
06.26	M	That one	M points to answer  All three look at the question
06.35	D	Wait, we need to look at the, we need to read the, so we know what this one is	D reaches for previous sheet with the instructions for that set of questions
06.50	M	That one's the odd one out	M points again at her answer
06.51	K	Yeah, that's the odd one out	D circles answer
06.55	K	That one	M also points to the same answer as K. D circles it
06.59	K	That one	
07.00	M	That one	M and K point to answer
07.00	K	Yeah that one, it's that one	D circles answer
07.05	K	That one	
07.05	M	That one	
07.07	K	It's that one	
07.08	D	Because they're all -	D circles answer
07.09	M and K	That one	M and K point at the same answer and D circles it
07.14	K and D	We're done	
07.28	L	And do you prefer doing it by yourself or in a group ?	
07.29	M	In a group	
07.30	D	In a group	
07.30	K	By our self	
07.31	L	You prefer doing it by yourself? And you prefer doing it in a group?	K nods D and M nod

Summary of Researcher Impressions

Each member of this group appears to be engaged with the paper completely during the whole of the test, gathered around the paper. It struck me that at no point do the children read the question aloud as a group or to each other – each time they read it to themselves.

Appendix 15: Transcript of group post-test, Kyle, Martha and Dan

Time	Name	Verbal Dialogue	Non-verbal dialogue (Images redacted)
00.17	K	No, you can't do it because you did it last time	D takes pencil 
00.20	D	Did I?	
00.21	K	Yeah	
00.22	D	Oh yeah	D hands pencil to Martha
00.27	M	So, who's going to read?	
00.30	D	(to K) Yeah, you	
00.38	M	What comes next, circle the letter	
00.40	K	That one's already done	
00.50	D	That one's done for us	All three children gathered around test, reading questions by themselves 
00.54	K	This one. It should be this one.	Martha goes to circle the one that Kyle points out, and then pauses
00.58	D	No, cause he doesn't …	
00.59	M	He doesn't have the ears and they've already put the ears on	Kyle has pointed to the wrong answer
01.05	D	No, but look at that	
01.06	M	Oh! This one	
01.10	D	No him	D points at far left image
01.11	K	It's this one, this one	K points at far right image
01.12	D	Really?	
01.12	K	Yeah, because he doesn't have any hair	
01.15	M	And they haven't put any hair on yet	
01.19	D	Except for those 2	D points at both images which have hair
01.20	K	Yeah, but…	K sits back and looks at the paper

01.27	K	It should be that one	
01.28	D	Except he doesn't have a nose	M circles answer
01.34	K	Yeah, we did that one because he has a nose	
01.39	M	Does that one come next?	M moved on to next question
01.40	K	That one's easier, so it should be…	
01.45	D	Shouldn't it be?	D turns the paper toward him
01.48	K	This one because they drunk it	K points at an answer 
01.51	D	Nearly all of it	
01.53	M	No, they've put some of it…	
01.54	K	Yeah, this one's a different cup so it should be this	
02.00	D	No but look at that, that's the same	
02.03	M	That's not (inaudible)	
02.03	D	This is it!	
02.05	K	No, because then it's different cups	
02.07	D	Yeah, because that's the different one	
02.10	K	You need to do this one, D.	
02.12	M	I thought that too	M circles answer D
02.25	D	That one?	Children read question silently . D points to an answer
02.29	K	It should be this one, because then there's another layer. 4 and 5	K points to same answer as D
02.35	D	Yeah, yeah	D looks at all of the answers, pointing to each
02.37	M	This one?	M points to answer B
02.28	K	It's A, this one. It's because that one has 3, then it should be 2 then it should be 1.	M circles A
02.57	D	It's that one, because that one doesn't have anything in	Children all look at next question
03.01	K	Yeah, no, it's that one	K points to a different answer
03.02	M	None, 1, 2, 3	M points to all of the different pictures, counting the pattern 
03.08	K	No, it should be, no wait, which one should it be?	Points to several answers

03.12	K	You can see the dots, there's 2 of those	 All children are looking at the different answers . D points to one of the answers
03.24	K	No, because (inaudible)	
03.29	D	It has to match up with one	
03.31	M	It tells a story, 1, 1, 2, 3,	
03.40	K	Which means	
03.42	M	It's got to be 4	
03.50	D	None of them actually have 2 of those white ones	
		1,2,3,4	D counts the different beads
04.09	K	This can't be it, because of the white one	
04.09	D	No	
04.17	D	1,2,3,4,5,6. This one	Looks at K whilst counting
04.22	K	1,2,3,4,5,6,7. It's that one	
04.25	D	No	
04.28	K	1,2,3,4,5,6	
04.29	D	No, this one has 6	
04.31	K	No, it's this one. 1,2,3,4,5,6,7	
04.37	M	1,2,3,4,5,6	
04.40	K	This one has 7, this one has 7. It goes with the pattern, so it has to be A	Pointing at answer A
04.43	D	It has to be B because that one has 6 and that one has 6	
04.47	K	No, because then it would be the exact same, but this one is right	
04.53	D	Ok	
04.54	M	Ok, I'll circle it	M circles answer
05.06	K	That one's already done, so You need a head, you need a head	
05.11	M	You need a head (laughs)to put the hat	M circles answer
05.25	K	Roll	Children read next question silently
05.26	M	Are you sure?	
05.27	K	Or it could be	
05.30	M	You need a complete cake	
05.34	K	Oh yeah, and then you make 1 slice . Yeah	
05.37	M	Shall I do it?	M asks K if she should circle answer
05.37	K	Yeah	M circles answer
05.54	D	The mouse needs the cheese	
05.55	M	And the dog needs the bone	
05.56	D	Yeah, just circle the bone	
05.57	M	The bone or the kennel?	
05.59	K	No, it doesn't, it needs the bone	

06.04	M	It doesn't need the cat, it doesn't need the ball, it doesn't need the kennel either	M circles bone answer
06.15	M	Lots of carrots?	Children read next question silently 
06.21	K	I think this because then it's – no wait, no, it isn't that one, I apologise, it's this one because there are 4 of these	
06.32	D	And there's 1,2,3,4 of these	M circles answer
06.37	D	Errrrrrrrrrrrrrrrr that goes with that	
06.45	M	That goes with that	
06.47	D	No, that goes with that, because look, he's got that	
06.48	K	Oh yeah, it is this, it is, yeah	
06.53	M	Yeah	M circles answer
07.05	K	I think it's this one	Children read next q silently. K points to an answer
07.10	M	It needs that one because it's a matching shoe	M points to a different answer
07.12	D	Oh yeah!	
07.12	K	Oh yeah! That one	
07.15	D	That pair	M circles answer
07.26	K	This one, this one, this one	Point to answer, M circles and they move on to next q
07.26	M	Yeah	
07.33	M	It's that	
07.34	D	It goes with that	
07.37	K	Oh yeah, it goes with	
07.37	M	They're both money	
07.49	D	It's the spoon because I figured out that it's not sharp	Children look at next q
07.50	K	They can all cut, but not the spoon	
07.54	M	And you can eat with it	
07.56	K	You can eat with the spoon	
08.03	D	That's the odd one out, it's the circle	D looks at the next question
08.06	K	It's a circle	
08.08	M	Circle	M circles answer
08.12	D	That one's the odd one	
08.13	K	How?	
08.17	M	Cause look, it's the only one facing down	
08.18	K	And it has a different pattern	
08.20	M	Yeah	M circles answer
08.22	D	I don't think it's meant to	
08.33	K	That's cake, pie, more pie, cheese . Who	Next q

		likes that?!	
08.35	D	Not me!	
08.35	K	The odd one out, so what's the odd one out? Oh, that one, pizza	
08.41	D	Why?	
08.48	K	Because they're like cake	
08.49	M	They're like sweet stuff, and that's	
08.52	K	It's very like hard	
08.53	D	Oh yeah, yeah	M circles answer. D moves the paper to face him
08.56	K	Which is the odd one out?	
09.02	D	Here	Pointing to answer
09.10	K	Oh, it can't be the colour, can it?	
09.10	M	Oh, is it that?	Pointing to answer
09.14	D	That's a pattern, and the other ones aren't	
09.16	M	That's a pattern	
09.20	D	I think it's just the copy that made it different colours. 1.2.3.4.5. 1.2.3.4.5. 1.2.3.4.5.6 1.2.3.4.5 1.2.3.4.5	
09.38	K	5. It's that one	
09.38	D	It should be that one because that one has 6	M circles answer
09.48	D	It's going to be that one, because it doesn't have a pattern on it	Next q
09.51	K	Yeah, it's that one, because it's	
09.53	M	Those ones have (inaudible)	
09.56	K	That one's upside down, it's definitely A	M circles A
10.03	K	The fork	Points to answer
10.04	M	Yeah	Circles answer
10.09	M	Seaweed	
10.11	D	Seaweed, because the other ones are animals	
10.12	K	Yeah	M circles answer
10.15	D	That one, sheep, because the other ones are dogs	
10.19	K	And they have tails	
10.20	D	That one has a bushy tail	
10.21	M	Bushy tail!	
10.23	D	Like a rabbit tail!	M circles answer
10.35	M	Um, that one?	
10.37	K	It's this one, because you can see	Points to the pattern to show the image
10.40	M	Ok	
10.41	K	Blank, line	M circles answer
10.46	K	Um, carrot, stick thing, oh, it should be this	Next q
10.48	D	Yeah	
10.50	M	Lettuce	Circles answer
10.55	D	It's going to have to beeeeee…	
10.57	M	The queen of hearts	
10.58	K	The club, is that the club?	
11.00	M	Yeah	

11.04	D	Yeah, the club, because there's only one club	
11.11	K	This one	
11.13	M	The daisy	
11.15	K	Yeah	M circles answer
11.18	D	Because all the other ones	
11.20	K	Finished, done.	

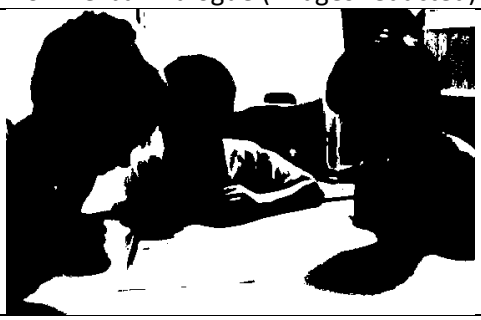
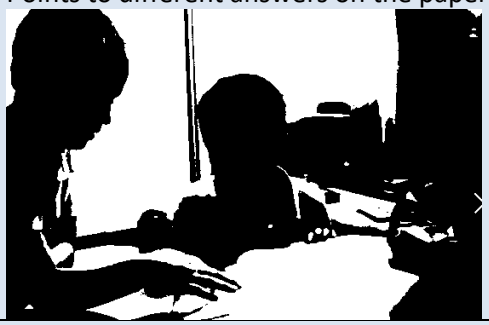
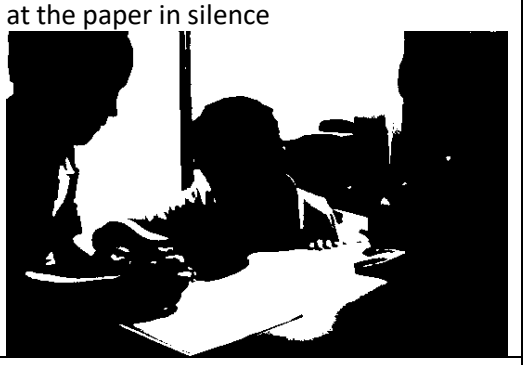
Researcher summary

This group spent some time at the start deciding on the organisation of who was to do the writing and who was to read the questions. However, as in the pre-test, they still read the questions to themselves.

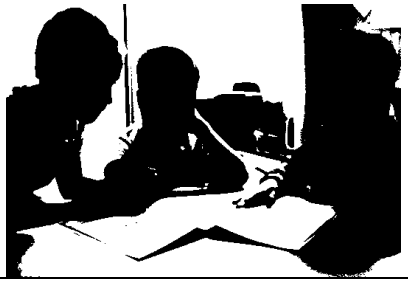
The group spend a longer time on the questions in this test, with both M and D taking a more verbal role. They all explain their reasons to each other where needed. Some of the exchanges are very long for some questions, others are much shorter, but the children seemed to all view the answer as correct (which it was), and did not seem to see the need for longer discussion

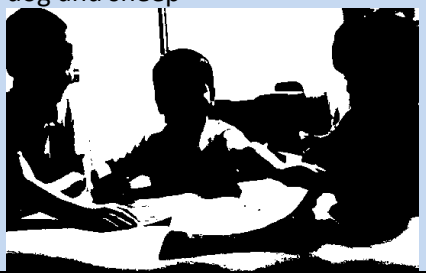
The person who initiated the discussion for each question changed frequently, pattern K,M,D,K,K,D,M,D,K,M,D,D,D,K,D,K,M,D,M,K,D,K

Appendix 16: Transcript of group post-test, Arthur, Adam and Peter

Time	Name	Verbal Dialogue	Non-Verbal Dialogue (Images redacted)
00.25	Peter	These tell a story, which one comes first. Which -	
00.32	Arthur	That's one's already done	
00.33	Peter	Oh. That's got a nose, is it, no it's not that. Is it this?	Points to different answers on the paper 
00.45	Arthur	Yes	
00.46	Peter	Ok	Arthur circles answer
00.55	Peter	Your turn to write (to Arthur)	
01.12	Peter	Um, is it this one?	Arthur turns paper towards him. He looks at the paper in silence 
01.13	Arthur	Because like everybody puts sugar in their tea	
01.21	Peter	It might be that	
01.22	Arthur	It could be that one, or that one	
01.25	Peter	It's that one	Adam is standing to be able to see. Arthur nods with his head at the answer he thinks

			
01.32	Peter	Ok	Peter circles answer
01.34	Arthur	Now it's Adam's turn to do the pencil	
01.36	Peter	And then it's going to go back	Adam looks at the paper in silence
01.43	Adam	You can't have a thing if (inaudible)	
01.45	Peter and Arthur	It's A	Arthur and Peter point to the answer as they tell Adam what it is 
01.52	Arthur	It's smallest to biggest	Adam circles answer and hands pencil to Arthur
01.53	Peter	Yeah	
02.02	Arthur	So that's full	Arthur looks at paper in silence
02.12	Adam	It's that one, it's that one	Arthur circles answer
02.17	Arthur	Right, Peter's turn	Hands pencil to Peter
02.19	Peter	What completes the pair in the same way as the first pair…they've done that one	Arthur points at the next question down after the example
02.33	Peter	Is it this one, or this one, or this one, or this one?	
02.45	Arthur	It's this one, because cap goes to head	Points to answer
02.47	Peter	Ok	Peter circles answer
			Peter slides the paper across the table. Arthur turns the page
02.57	Adam	Please can I have the pencil	
02.58	Peter	Oh yeah, sorry	Adam looks at paper while mumbling inaudibly to self
03.04	Adam	It's A isn't it.	
03.05	Arthur	Yeah	Adam circles answer
03.14	Arthur	A petal, no. Egg is to eggs. Carrot is to carrots	Adam passes pencil to Arthur Arthur circles answer
03.25	Arthur	Peter	Hands pencil to Peter
03.33	Peter	Soap is to bath, toothbrush is to, washing up liquid is to washing up in the washing machine. Your turn Adam	Circles answer. Hands pencil and paper to Adam
03.54	Arthur	So slipper goes with matching slipper now	Adam looks at paper in silence an then

			circles answer. Passes pencil and paper to Arthur
			Arthur looks at paper in silence
04.07	Peter	So this'd be that one, it's that one. Because this and this wraps it up to make this, so this wraps up to make that	Arthur circles answer. Passes pencil and paper to Peter
04.25	Peter	That is to write and this is to	
04.32	Arthur	That is to	Finger hovers over paper
04.36	Peter	Money?	
04.36	Arthur	Yeah	
04.37	Peter	Cause a wallet has money in it	Peter circles answer
04.48	Peter	It's your turn	Passes paper and pencil to Adam
04.50	Adam	Thank you	Adam looks at paper, mumbling under breath to self 
05.12	Peter	Which one's the odd one out? This one, cause it's not in the pattern, bigger than and smaller than. It's a big circle, and there's a small circle	Adam circles answer and passes pencil and paper to Arthur
05.25	Arthur	The odd one out is that one because it's looking down not straight out	Arthur circles answer
05.36	Peter	The odd one out is probably that one, cause it has more than one slice in it. That one has one slice, that one has one slice, that one has one slice, that one has two slices	
05.58	Arthur	Yes definitely	Peter circles answer. Arthur takes pencil
06.08	Peter	Isn't it Adam's turn?	
06.09	Arthur	Oh yeah	Passes pencil and paper to Alex
06.18	Arthur	It's that one because it's big small big small	Adam circles answer and passes paper to Arthur
06.38	Arthur	So the odd one -	Looks at paper in silence
06.46	Peter	This one because it has a pattern on the bottom and it doesn't have a pattern on the top	
06.51	Arthur	Oh yeah	Circles answer and passes paper and pencil to Peter
07.05	Peter	Ok, which one is the odd one out?	
07.07	Arthur	I know, that one, the money bag	Peter circles answer
07.13	Peter	Ok, Adam, your turn. Which one is the odd one out? It might be that one because it's not living	Passes pencil and paper. Peter reaches over table to point to an answer. Adam circles answer and passes pencil and paper to Arthur
07.28	Arthur	So the odd one out	

07.29	Adam	That one	Adam points to answer 
07.32	Peter	Yeah	Arthur circles answer
07.33	Arthur	A sheep is not a dog, definitely. That's a dog, that's a cute little doggy	
07.38	Peter	And that's a sheep	Children all smile as they talk about the dog and sheep 
07.50	Peter	Now we're doing patterns so line, X, blank, line, X, blank. Line, it's a line	Circles answer and passes pencil and paper to Adam.
08.08	Adam		Looks and paper in silence, circles answer and passes paper to Arthur
08.21	Arthur	Cabbage	
08.24	Peter	No, you're doing this one	Arthur looks at paper
08.37	Peter	It's hearts, triangle	Arthur circles answer
08.39	Arthur	Yeah, diamond, that	Arthur uses finger to point out the pattern. Passes paper and pencil to Peter
08.45	Peter	Open, closed, different flower, open, closed, different flower. Right?	Looks to Arthur for confirmation
08.55	Arthur	Yeah	Peter circles answer
08.59	Peter	We're done	